

CORRESPONDENT BANKING

INPUT

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COMPUTER SERVICES MARKETS IN
CORRESPONDENT BANKING

INDUSTRY REPORT

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I INTRODUCTION

I INTRODUCTION

- This report is produced by INPUT as part of the Market Analysis Service (MAS). The report covers Computer Services Markets in Correspondent Banking.
- This area of research was selected because of high client interest. It has significant potential for computer services revenues made more available due to changing methods of services delivery.
- Before the research began, INPUT clients were asked to suggest particular questions and specific areas of interest to be incorporated in the study. A number of points were added to the questionnaire as a result of client comments.
- Research carried out for this report included a series of interviews as specified in Exhibit A-6.
- Separate questionnaires were used for users and vendors. Sample copies of these questionnaires are included in Appendix C.
- Interviews were carried out in November and December 1977.
- Inquiries and comments on the information presented in this report are invited from clients.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. SCOPE AND KEY CONCLUSIONS

- Although the market for correspondent bank computer services is very competitive, excellent opportunity still exists for effective market entry or expansion by computer services vendors. This is particularly true in the near term due to:
 - A relatively higher growth rate in branch banks compared to non-branch banks.
 - State legislative changes allowing for both state-wide branch banking and for the formation of multi-bank holding companies. The latter have business oriented managements who are more willing to have computing centers run by computer services vendors who potentially can run them more profitably than in-house personnel.
 - By on-line automation of correspondent bank functions, very large and large banks are responding to increased competition for consumer's deposits from savings and loans and federal credit unions. This automation is "rippling down" to the medium and small banks, who also perceive the need to remain competitive by installing applications such as customer central information files (CIF).

- Correspondent bank computer services, as defined for this report, serve four functions in commercial bank operations:
 - Demand deposits.
 - Savings.
 - Loans.
 - Administration functions related to the above.
- The computer services are offered by commercial banks and computer services processing vendors to correspondent banks, and by computer services software vendors to banks who in turn do correspondent bank processing.
- Results of the study show a 1977 market for correspondent bank computer services of \$641 million. This represents 24.5% of total 1977 EDP expenditures for standard bank functions; services will grow at an average growth rate (AAGR) of 16% to \$1.3 billion by 1982. These revenues are defined by mode of service in Exhibit II-1.

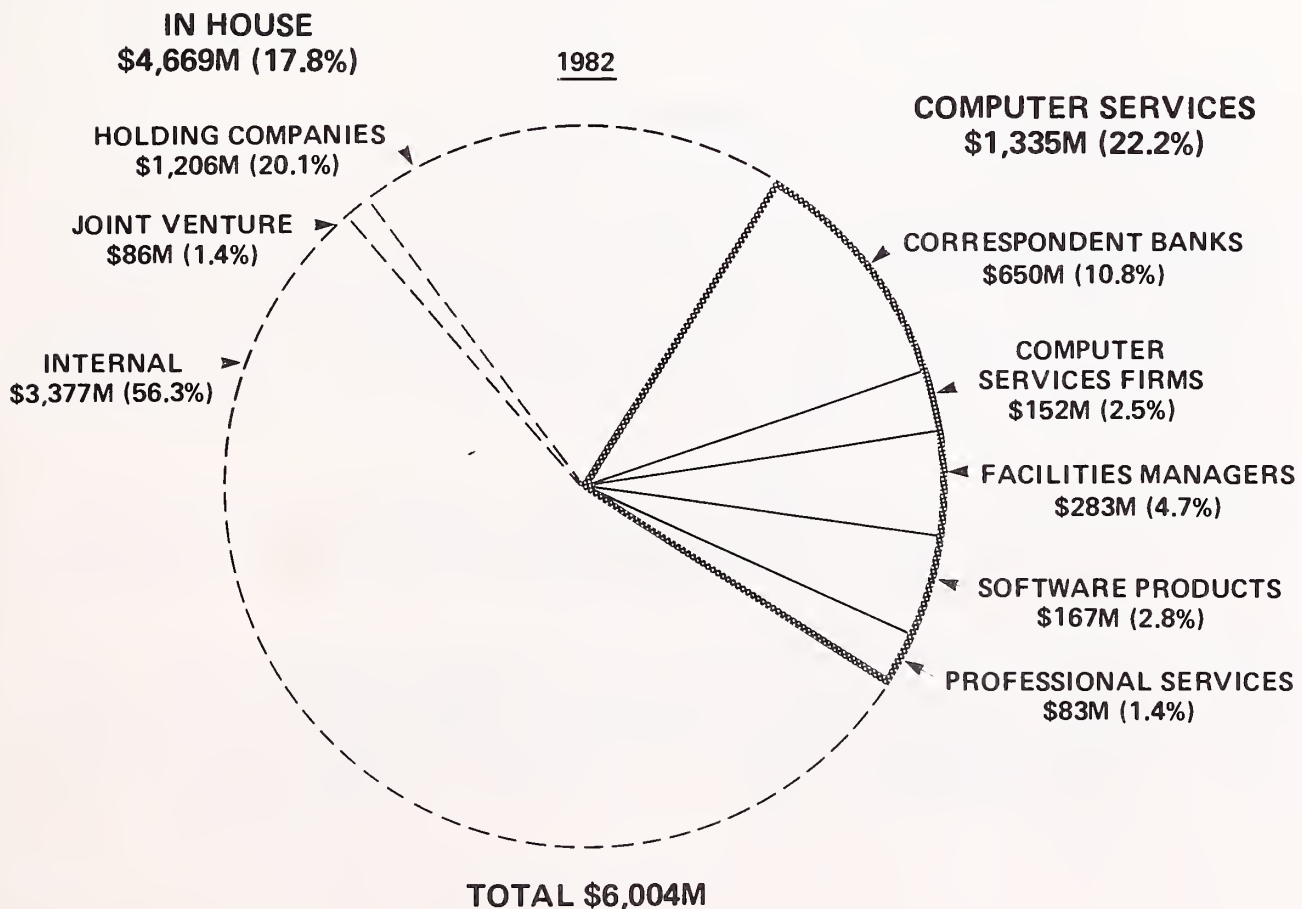
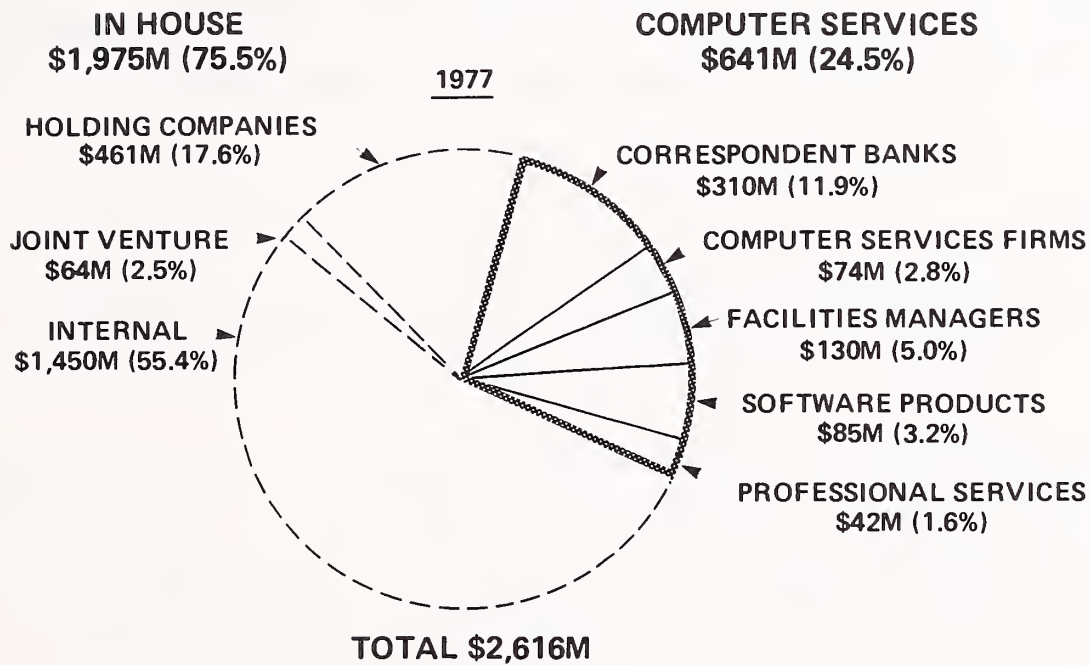
B. FINDINGS

I. MARKET STRUCTURE

- The number (14,536) of commercial banks is growing slowly (AAGR: 0.5%), and the number of bank branches (34,327) is growing more rapidly (AAGR over the last 17 years: 7.0%).
- The correspondent bank computer services market is found primarily among small banks with deposits over \$10 million, and medium sized banks, of which there are approximately 10,300.

EXHIBIT II-1

TOTAL EDP EXPENDITURES FOR DEMAND DEPOSITS, SAVINGS, LOANS AND RELATED FUNCTIONS (1977/1982)



- Total bank deposits, which have grown at an average growth rate of 9.6% over the last 17 years, are comprised of demand deposits (40.1%), savings (24.2%), and time deposits (35.7%). The demand deposit function (together with its related administration) accounts for 63% of total EDP expenditures for the standard bank functions. Savings accounts for 30%, and loans, the remaining 7%.
- Technology is influencing the market structure in the following areas:
 - Increased payment systems automation (ACH, EFTS, and Pay-by-Phone).
 - User oriented terminals (Inquiry and ATM).
 - The use of microcomputers for communications processors.
 - The use of minicomputers for authorization/transaction systems, and for distributed processing.

2. USE OF EDP FOR STANDARD BANKING FUNCTIONS

- A significant portion of the \$1.9 billion spent in-house for EDP for standard banking functions, which does not flow to computer services vendors, is available for capture by them. (See Exhibit II-1.) The EDP figures are shown because they represent a significant measure of the ultimate potential market which could be connected to services.
 - One likely segment is EDP expenditures for bank holding companies (a major portion of which are multi-bank).
 - These companies spend \$461 million per year and often have professional management who are receptive to contracts with outside computer services vendors.

- Although nearly half (47%) of the respondents interviewed felt that the trend was for centralized correspondent bank processing, over a quarter (27%) of them felt correspondent bank processing would actually be accomplished in two ways:
 - Centralized for those banks near (200 miles) the correspondent bank processing center.
 - Distributed through satellite centers and by on-premises minicomputers for those banks more remotely located.
- Respondents reported a strong trend toward the use of on-line systems. Over one-third (36%) of the respondents were accomplishing the savings function on-line; over 43% were using interactive CRT terminals for inquiry and file maintenance; and 60% of the respondents felt that customer central information files were highly important.

3. COMPUTER SERVICES FORECAST

- Computer services for correspondent banking, as defined in this study, are a major portion of the total Banking and Finance industry market for computer services. As presented in the previously published INPUT Computer Services Industry Annual Report for 1977, total computer services revenues are \$1,330 million in 1977, growing to \$2,840 million in 1982. Details are presented in Exhibit II-2.
- The forecast of computer services expenditures for correspondent banking distributed by mode of service is shown in Exhibit II-3.
 - The forecast highlights the marked shift from batch to remote computing services, as banks shift to using more on-line operations and install satellite processors and on-site minicomputers for remote processing.

EXHIBIT II-2

COMPUTER SERVICES MARKET FORECAST FOR BANKING AND FINANCE INDUSTRY (1977/1982)

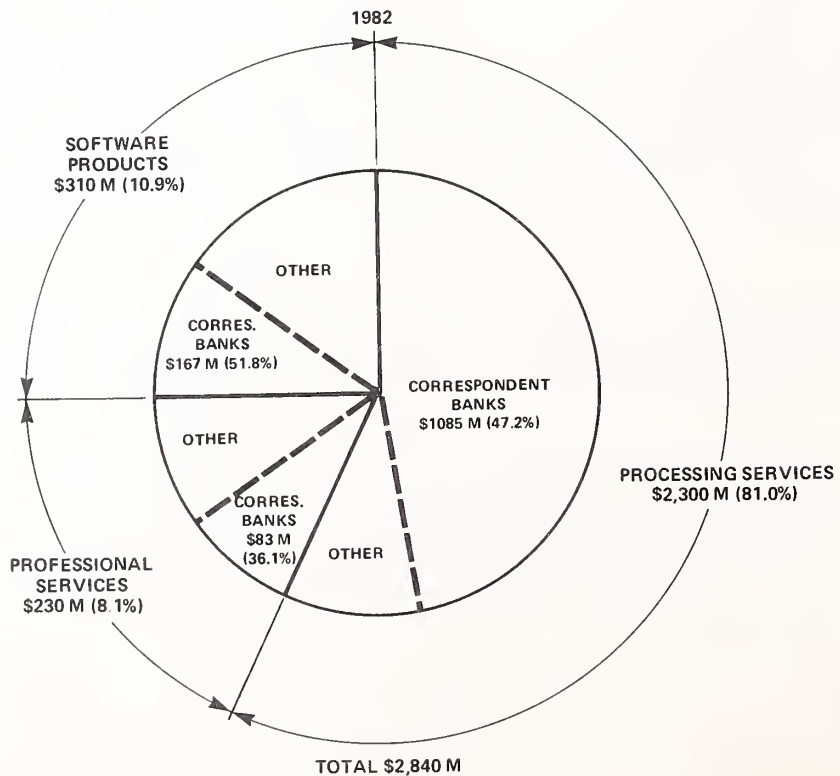
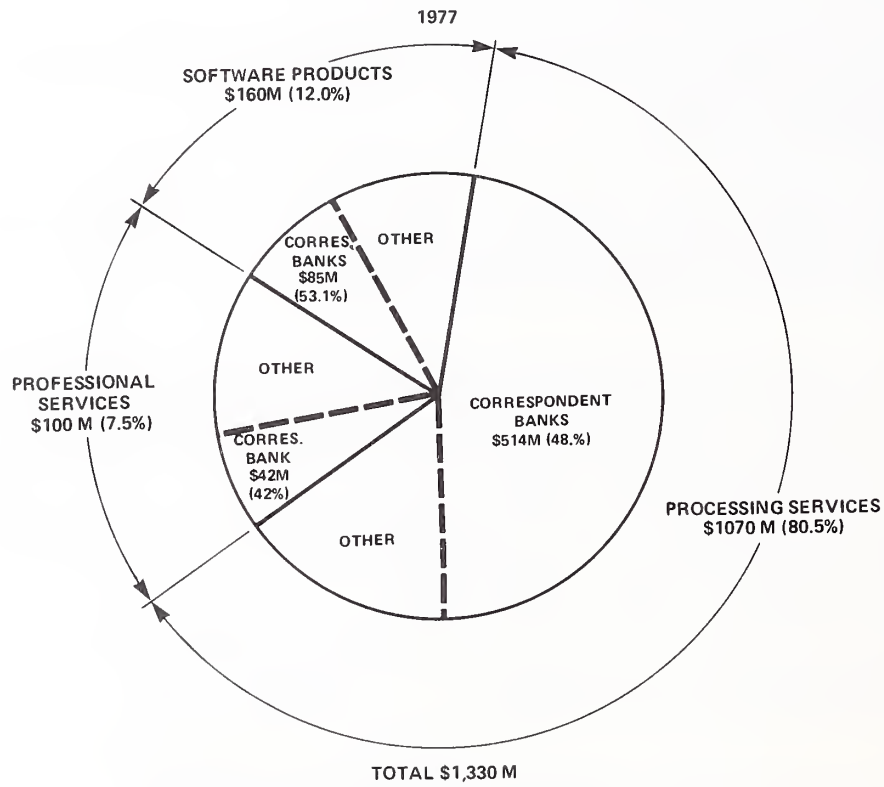
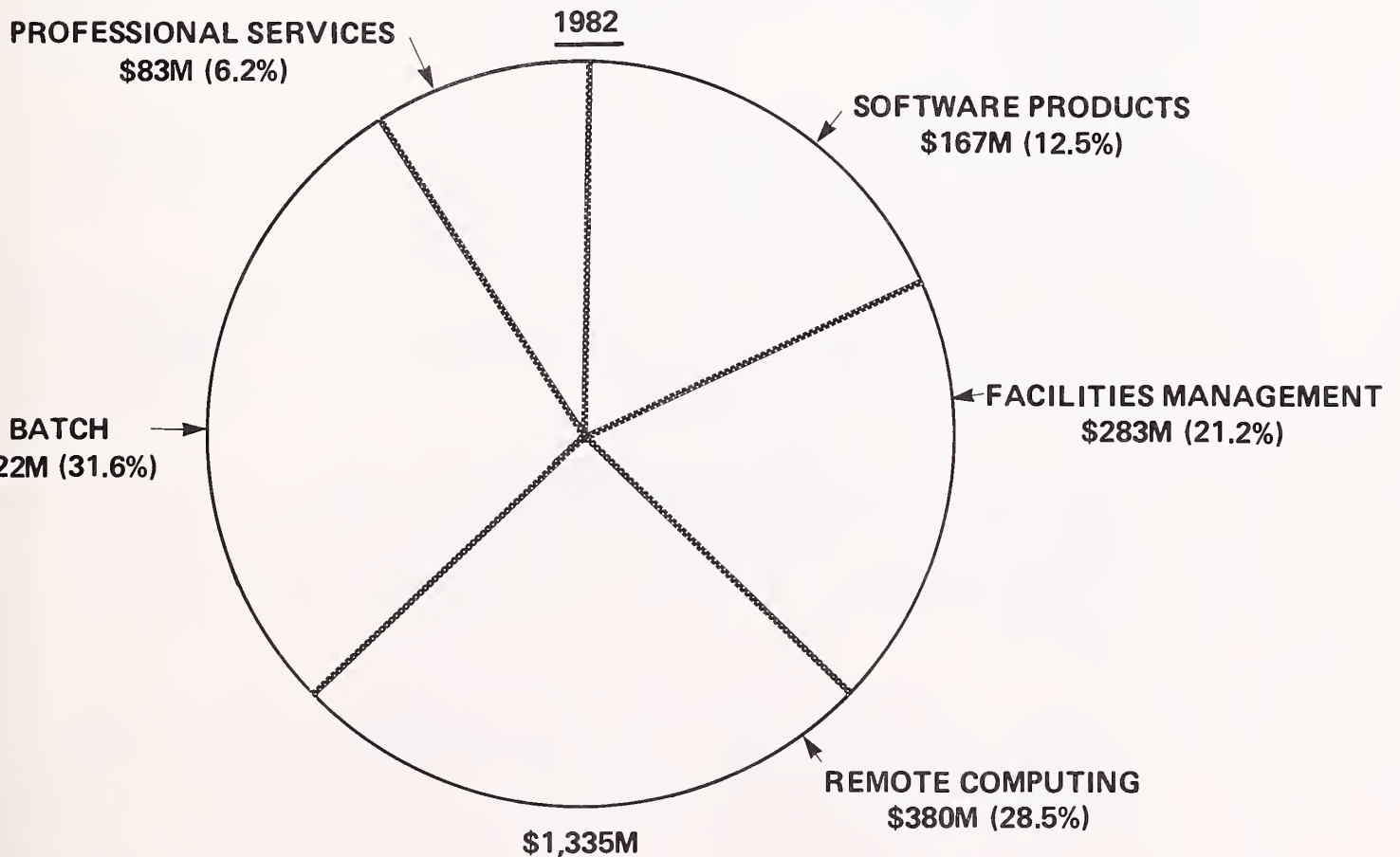
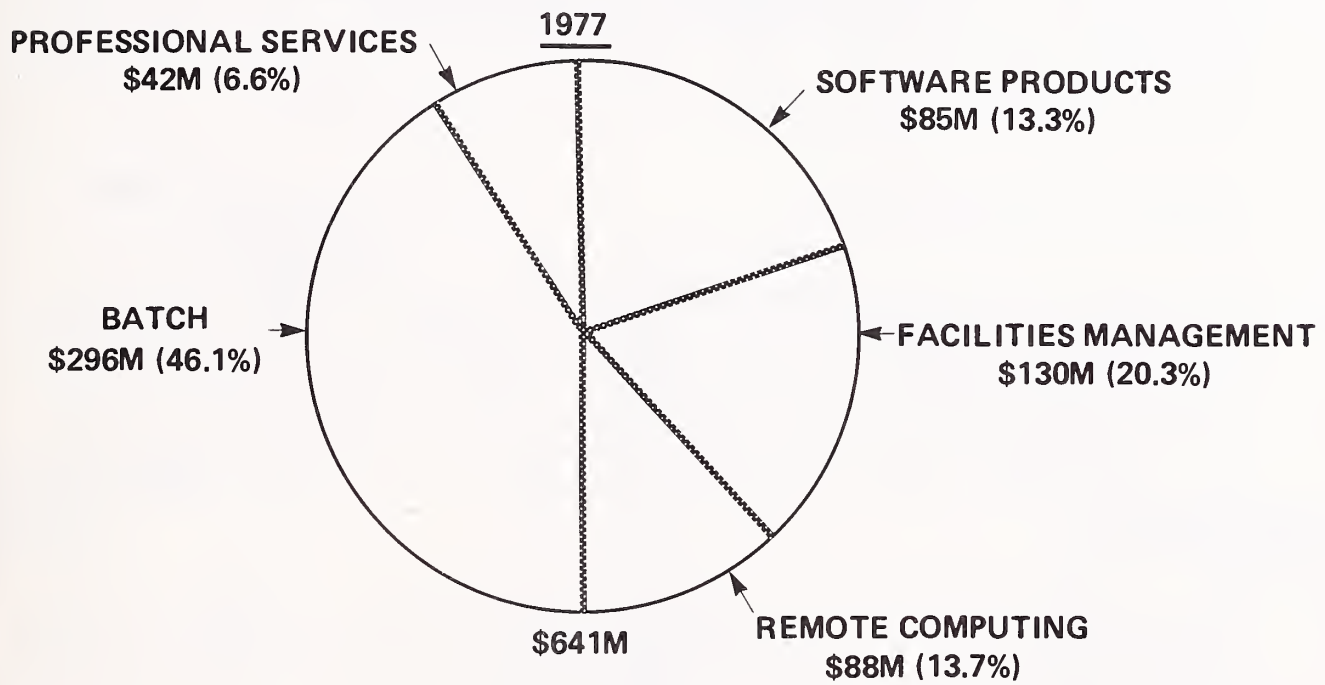


EXHIBIT II-3

COMPUTER SERVICES EXPENDITURES FOR CORRESPONDENT BANKING BY MODE OF SERVICE (1977/1982)



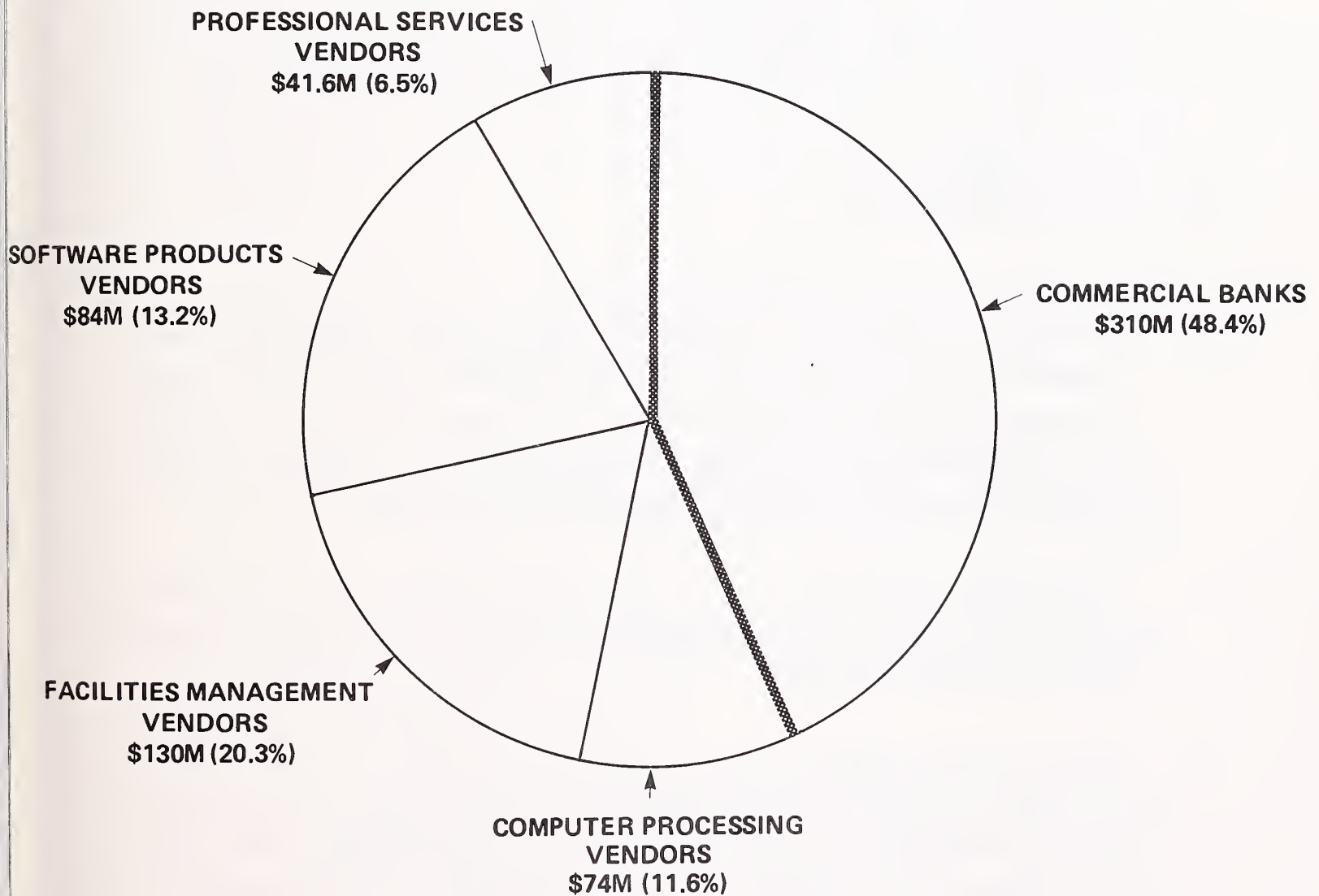
- Correspondent banking maintains an approximately constant proportion of the total Banking and Finance market with 48% in 1977 and 47% in 1982.
- Although the market for correspondent bank computer services grows to \$1.3 billion by 1982, it will decrease slightly from 24.5% to 22.2% as a portion of total EDP expenditures for these bank functions as some banks shift to in-house, and others consolidate with multi-bank holding companies.

4. COMPETITIVE ENVIRONMENT

- The market for correspondent bank computer services is highly competitive with banks and computer services vendors fighting for market share. The current market distribution among the various vendor types is shown in Exhibit II-4. Commercial banks and services companies now split the market on a 48:52 basis.
- The proliferation of the over 200 services companies and banks serving correspondent banking needs is a direct consequence of the time limitations of courier transportation.
- The rising costs of labor and energy for transportation, the decreasing costs of data entry and of telecommunications, and changes in federal and state banking regulations will result in market structural changes:
 - Very large (national) banks and national computer services vendors will greatly increase their market share.
 - Small, local processing vendors, which lack capital, technological expertise for new applications, and the extensive telecommunications capabilities necessary for remote on-line processing, will do well to hold their own.
 - In many cases small vendors will associate themselves with large banks or national computer services companies.

EXHIBIT II-4

CORRESPONDENT BANKING COMPUTER SERVICES
MARKET SHARE BY VENDOR TYPE
(1977)



- Therefore, considerable consolidation is expected among vendors in the next five years.
- Among services companies, ADP and Itel Data Services are examples of leading processing services vendors; University Computing Company and Tymshare of leading software vendors; and Systematics and National Sharedata of leading FM vendors.
- Among banks, First National Bank in Boston, Wachovia Bank in Winston-Salem, Mellon Bank in Pittsburgh, and Continental Bank in Chicago, are all committed to offering correspondent bank processing services .

C. RECOMMENDATIONS

- Although the market for correspondent bank computer services is very competitive, excellent opportunity still exists for effective market entry and expansion by computer services vendors. This is particularly true in the near term, due to the market structural changes outlined above. Vendors with this market sub-sector under consideration should not delay action.
- Vendors should plan market entry in states where revised banking laws support the shift from unit or county to state-wide banking. Florida and Illinois are two such states in transition.
- Special attention should be given to joint ventures with multi-bank holding companies, particularly those newly forming. This is particularly true for facilities management vendors. Executives in holding companies are much more supportive of computer services specialization than counterparts in commercial banks.
- Sales and marketing to financial institutions should be carried out by a separate group within marketing. This group would handle S&Ls, finance companies, and credit unions, as well as commercial banks. Specialization is necessary since banks, particularly small ones, look for "image."

- Marketing of correspondent bank processing services should be combined with offerings to the S&L industry. Correspondent banks and S&Ls have very similar processing requirements. The S&Ls requirements are outlined in the recent INPUT report, "Computer Services Markets in the Savings and Loan Industry."
- Vendors offering processing services should target the small banks with deposits of \$10-100 million.
- Vendors of professional services should emphasize programming and software maintenance of specialty applications for large correspondent banks. Skills in distributed data processing, on-line systems, and telecommunications networks will be much in demand. Those services will grow at 15% AAGR, compared to 13% for all industries.
- Software vendors should also consider offering products and services to those medium sized banks which wish to break away from dependence on a computer services vendor or bank, and establish their own systems.
- Vendors offering any one mode of service (processing, software, FM, or professional services) should broaden their offering to other modes to leverage their expertise and capitalize on the increasing complexity of the marketplace.
- Geographic concentration should be on the North Central and Midwest areas since these areas contain a large number of small banks and account for a relatively high portion of bank deposits.
- Vendors entering the market for the first time should acquire small services companies doing processing for several banks. The acquisitions can then be combined with national communications networking expertise. Most current vendors are small and need capital to keep pace with new processing networks; therefore, they are candidates for acquisition.

- Processing services vendors should capitalize on the rapid growth of automated payments by establishing automated clearing houses (ACHs) through groups and associations of banks. Vendors should concentrate on less urban areas since large metropolitan areas already have ACHs established. The ACH becomes a node in the payments network, and vendors can thereby exploit their technology through their national networking capability.
- Software products companies should develop software packages tailored to correspondent bank processing requirements of very large banks, multi-bank holding companies, and also correspondent bank processing services vendors.
 - The software packages should operate effectively for both multi-branch and multi-bank processing.
 - Packages for both Burroughs and IBM EDP systems are in demand.
- Vendors' plans should allow for the development of modularized, user-oriented, transaction terminals, micro/mini processors for use in banks (branches), and satellite processors in distributed payments systems networks. In particular, processing services vendors must include distributed data processing (DDP) capabilities in order to support local, on-line, CRT facilities.
- Software product vendors have a major opportunity in developing software to support DDP in a multi-bank, multi-branch operating environment. This opportunity covers in-bank processing as well as correspondent bank processing services.

III INDUSTRY STRUCTURE

III INDUSTRY STRUCTURE

A. FUNCTIONAL DESCRIPTION

- The industry subsector which is the focus of this study is the commercial banking industry (SIC Group 60). It is composed of:
 - Commercial banks.
 - Mutual savings banks.
 - Non-deposit banks and trust companies.
 - Miscellaneous other banking institutions.
- Because the characteristics of the industry are important factors in definition of product and marketing strategies, they will be covered in some detail in this section.
- Commercial banks comprise over 99% of this industry subsector (see Exhibit III-1). Because of this dominance, the analysis concentrates on commercial banks.
- The number (14,536) of commercial banks has grown little (AAGR 0.5%) over the last 17 years. However, bank branches have grown more rapidly (AAGR 7%), yielding a current total of approximately 50,000 banking outlets (see

Exhibit III-1). These require an ever widening array of terminal equipment, communication networks, and complex data processing services.

- Small banks dominate the marketplace. In June 1977, over 83% of all banks had deposits under \$100 million, 31% of which had deposits under \$10 million. Commercial banks with deposits under \$10 million are considered to be under the domination of their larger correspondent; hence, they are not viable computer services market candidates. The percentage of small banks with deposits under \$10 million has diminished from over 80% of all banks in 1960, to the current 1977 proportion of just over 31% (see Exhibit III-2).
- There are significant differences in the primary characteristics of banks, branches, and deposits according to geographic region (see Exhibit III-3). The Pacific Coast has few (3%) banks but many (17%) branches. The Midwest, where restrictive state banking laws inhibit state-wide banking, has the largest (36%) number of banks, and the fewest (2%) branches. Over half (51%) of all bank deposits are located in the Northeast (largely New York) and North Central (Chicago) regions.
- The ten leading states in terms of customer deposits are shown in Exhibit III-4. Banks in these states hold over 75% of all bank deposits, over 53% of the bank branch outlets, and contain over 38% of all banks. These regional differences are critical when considering market strategies.
- Very large (deposits over \$1 billion) and large banks (assets \$500 million-\$1 billion) dominate (61%) the 1977 marketplace. Small banks with deposits under \$10 million hold less than 10% of total 1977 customer deposits; hence, their influence has been minimized in forecasting computer services revenues. (See Exhibit III-5.)
- Commercial bank deposits have grown from \$233 billion in 1970 to \$1,104 billion in 1977 for an AAGR of 9.6% over 17 years. The largest growth (AAGR 13%) has been in deposits with very large banks. The ability of smaller banks with deposits between \$10 and \$100 million to maintain their growth is significant when considering market size for correspondent banking data services.

EXHIBIT III-1

GROWTH OF BANKS AND BANK BRANCH OFFICES
(1960—1977)

BANK TYPE	NUMBER OF UNITS					
	1960	1965	1970	1975	1977	AAGR (%)
COMMERCIAL BANKS	13,350	13,673	13,581	14,392	14,536	0.5%
MUTUAL SAVINGS BANKS	515	506	493	476	457	—
NON-DEPOSIT BANK & TRUST COMPANIES	69	43	93	142	156	4.9
OTHER BANKING INSTITUTIONS	68	51	38	44	50	—
TOTAL NUMBER OF BANKS	14,002	14,273	14,205	15,054	15,199	0.5
TOTAL NUMBER OF BRANCHES	10,796	15,986	21,889	29,960	34,327	7.0
TOTAL NUMBER OF OFFICES	24,798	30,259	36,094	45,014	49,526	4.1%

EXHIBIT III-2
DISTRIBUTION OF COMMERCIAL BANKS BY SIZE
(1960-1977)

BANK POPULATION / BANK SIZE	1960			1970			1975			1977			AAGR
	NUMBER OF BANKS	PER- CENT (%)	CUM. %*	NUMBER OF BANKS	PER- CENT (%)	CUM. %*	NUMBER OF BANKS	PER- CENT (%)	CUM. %*	NUMBER OF BANKS	PER- CENT (%)	CUM. %*	
VERY LARGE >\$1 BILLION	23	0.2%	0.2%	59	0.4%	0.4%	90	0.6%	0.6%	108	0.7%	0.7%	9.5%
LARGE \$500M-1B	30	0.2	0.4	67	0.5	0.9	97	0.6	1.2	113	0.7	1.4	8.1
MEDIUM \$100M-500M	240	1.8	2.2	430	3.2	4.1	698	4.6	5.8	805	5.3	6.7	7.4
SMALL \$10M≤100M	2,321	17.4	19.6	5,141	37.9	42.0	8,028	53.4	59.2	9,472	61.9	68.6	8.6
<10M	10,736	80.4	100.0	7,884	58.0	100.0	6,141	40.8	100.0	4,798	31.4	100.0	-
TOTAL	13,350	100.0%	-	13,581	100.0%	-	15,054	100.0%	-	15,296	100.0%	-	0.5%

* CUMULATIVE PERCENTAGE

EXHIBIT III-3
DISTRIBUTION OF BANK CHARACTERISTICS BY
GEOGRAPHIC REGION
(1976)

REGION*	BANKS		BRANCHES		DEPOSITS	
	NUMBER	%	NUMBER	%	(\$ BILLION)	%
NEW ENGLAND	697	4.6%	3,112	10.3%	65.5	6.3%
NORTHEAST	1,032	6.9	7,766	25.7	355.8	34.5
SOUTHEAST	3,731	24.8	8,132	26.9	139.7	13.5
NORTH CENTRAL	3,121	20.7	4,372	14.5	171.7	16.6
MIDWEST	5,346	35.6	559	1.8	128.8	12.5
MOUNTAIN	712	4.7	1,184	3.9	30.9	3.0
PACIFIC COAST	404	2.7	5,106	16.9	140.2	13.6
TOTAL	15,043	100%	30,231	100%	1,032.6	100%

*SEE APPENDIX B FOR A DEFINITION OF REGIONS.

EXHIBIT III-4

TEN LARGEST STATES RANKED BY COMMERCIAL BANK DEPOSITS
(1975)

STATE	BANKS		BRANCHES		DEPOSITS	
	NUMBER	%	NUMBER	%	\$ BILLION	%
NEW YORK	400	2.7%	3,825	12.7%	\$273.0	29.7%
CALIFORNIA	231	1.5	3,620	12.1	116.1	12.6
ILLINOIS	1,224	8.1	0	0	73.5	8.0
PENNSYLVANIA	410	2.7	2,435	8.1	57.0	6.2
TEXAS	1,359	9.0	0	0	51.8	5.6
MASSACHUSETTS	316	2.1	1,323	4.4	34.6	3.8
MICHIGAN	359	2.4	1,543	5.2	32.1	3.5
OHIO	493	3.3	1,664	5.6	31.4	3.4
NEW JERSEY	222	1.5	1,506	5.0	28.2	3.1
FLORIDA	760	5.1	0	0	24.7	2.7
TOTAL TOP 10	5,774	38.4	15,916	53.1	722.4	78.6
ALL OTHERS	9,280	61.6	14,044	46.9	196.7	21.4
TOTAL	15,054	100%	29,960	100%	\$919.1	100%

EXHIBIT III-5
DISTRIBUTION OF COMMERCIAL BANK DEPOSITS
(1960—1977)

BANK POPULATION BANK SIZE	1960			1970			1975			1977			AAGR %
	DEPOSITS (\$BIL)	%	CUM.* %	DEPOSITS (\$BIL)	%	CUM.* %	DEPOSITS (\$BIL)	%	CUM.* %	DEPOSITS (\$BIL)	%	CUM.* %	
VERY LARGE >\$1 BILLION	\$ 69.37	29.8%	29.8%	\$223.24	42.2%	42.2%	\$456.51	49.7%	49.7%	\$ 586.84	53.2%	53.2%	13.4%
LARGE >\$500M≤\$1 BILLION	20.80	8.9	38.7	46.88	8.9	51.1	69.73	7.6	57.3	81.94	7.4	60.6	8.4
MEDIUM >\$100M≤\$500M	50.90	21.9	60.6	90.03	17.0	68.1	139.04	15.1	76.4	158.98	14.4	75.0	6.9
SMALL >\$10M≤\$100M	56.39	24.3	84.9	131.35	24.8	92.9	223.17	24.3	96.7	268.08	24.3	99.3	9.6
<\$10M	35.24	15.1	100.0	37.78	7.1	100.0	30.68	3.3	100.0	8.03	0.7	100.0	—
TOTAL	\$232.70	100.0%	—	\$529.28	100.0%	—	\$919.13	100.0%	—	\$1,103.87	100.0%	—	9.6%

*CUMMULATIVE PERCENTAGE

- Consumers and corporations are by far commercial banks' largest (83%) depositors (see Exhibit III-6). Demand deposits comprise only 40% of all customer deposits. This is significant when considering computer services revenues by modes of (batch vs. on-line) delivery.

B. INFLUENCING FACTORS

I. LEGISLATIVE

- The banking industry is highly regulated by both Federal and State Governments. Potential changes in laws at the federal level governing financial institutions including commercial banks were discussed at length in INPUT's 1977 MAS report "Computer Services Markets In The Savings And Loan Industry," and will not be repeated in this report. In summary, significant changes under consideration are: regulation of EFTS, interest rates ceilings on deposits, and third party (demand) payment accounts.
- Some state laws and regulations prohibit state-wide branch banking and the formation of multi-bank holding companies. Many states have followed the Federal Government in allowing the formation of bank holding companies. The growing importance of multi-bank holding companies is shown in Exhibit III-7. In Missouri, over 52%, and in Florida over 73%, of all banks are members of holding companies. In ten states well over half of all bank assets are in multi-bank holding companies. A more detailed distribution of multi-bank holding companies is shown in Exhibit III-8. Multi-bank holding companies are important targets for correspondent bank data processing services, as will be discussed in later sections.
- The distribution of state-wide branch banking by state is shown in Exhibit III-9. States are coming to terms with the market pressures to use electronic technology. For example, Florida and Illinois are expected to approve state-wide branch banking in the current legislative sessions.

EXHIBIT III-6

DISTRIBUTION OF BANK DEPOSITS
BY TYPE OF BANK
(1976)

TYPE OF DEPOSIT	DEMAND		SAVINGS		TIME		TOTAL	
	\$BILLION	%	\$BILLION	%	\$BILLION	%	\$BILLION	%
INDIVIDUALS, PARTNERSHIPS & CORPORATIONS	\$269.7	79.7%	\$198.3	97.0%	\$236.8	78.4%	\$704.8	83.4%
GOVERNMENTS	21.1	6.2	6.2	3.0	45.0	14.9	72.3	8.6
DOMESTIC INTER-BANK	38.0	11.2	—	0	7.6	2.6	45.6	5.4
FOREIGN BANKS	9.9	2.9	—	0	12.5	4.1	22.4	2.6
TOTAL	\$338.7	100.0%	\$204.5	100.0%	\$301.9	100.0%	\$845.1	100.0%
PERCENTAGE OF TOTAL		40.1%		24.2%		35.7%		100.0%

EXHIBIT III-7

IMPORTANCE OF MULTI-BANK HOLDING COMPANIES IN SELECTED STATES (1976)

STATE	NUMBER OF HOLDING COMPANIES	NUMBER OF HOLDING COMPANY BANKS	TOTAL U.S. BANKS		NUMBER OF HOLDING COMPANY BRANCHES	TOTAL U.S. BRANCHES		TOTAL HOLDING COMPANY ASSETS (\$ BILLION)	TOTAL U.S. BANK ASSETS	
			NUMBER	%		NUMBER	%		(\$ BILLION)	%
ALABAMA	7	63	300	21.0%	379	467	81.2%	\$ 7.23	\$ 11.00	65.7%
COLORADO	7	78	281	27.8	N/A	N/A	—	5.38	9.04	59.5
FLORIDA	31	553	760	72.8	N/A	N/A	—	22.29	28.41	78.5
MASSACHUSETTS	13	55	316	17.4	659	1,323	49.8	19.19	40.41	47.5
MICHIGAN	18	98	359	27.3	906	1,543	58.7	24.10	37.02	65.1
MINNESOTA	7	308	752	41.0	N/A	N/A	—	18.10	19.12	94.7
MISSOURI	21	370	710	52.1	N/A	N/A	—	14.54	20.95	69.4
NEW JERSEY	8	29	222	13.1	523	1,506	34.7	10.45	31.84	32.8
NEW YORK	10	59	400	14.8	1,389	3,825	36.3	96.19	327.98	29.5
OHIO	17	146	493	29.6	1,037	1,664	62.3	27.18	37.85	71.8
TEXAS	25	214	1,359	15.7	N/A	N/A	—	38.95	61.37	63.5
VIRGINIA	11	103	284	36.3	1,002	1,139	88.0	15.77	16.10	98.0
WISCONSIN	16	114	631	18.1%	76	313	24.3%	\$ 9.89	\$18.57	53.3%

N/A — NOT APPLICABLE

EXHIBIT III-8

DISTRIBUTION OF U.S. MULTI-BANK HOLDING COMPANIES
BY BANK DEPOSIT SIZE
(1976)

ASSET SIZE	NUMBER OF MULTI-BANK HOLDING COMPANIES	NUMBER OF BANKS IN HOLDING COMPANIES	AVERAGE NUMBER OF BANKS PER HOLDING COMPANY	TOTAL MULTI- BANK HOLDING COMPANY ASSETS (\$ BILLION)	AVERAGE ASSETS PER HOLDING COMPANY (\$ BILLION)
VERY LARGE >\$1 BILLION	69	1,135	16	\$310.57	\$4.50
LARGE >\$500M ≤ \$1 BIL	44	337	8	33.45	0.78
MEDIUM >\$100M ≤ \$500M	92	483	5	24.07	0.26
SMALL >\$1M ≤ \$100M	20	53	3	\$ 1.02	\$0.05

EXHIBIT III-9
BRANCH BANKING STATUS 1975

ALL BANKS		15,054 29,960
NUMBER OF BANKS NUMBER OF BRANCHES		
STATES WITH STATEWIDE BRANCH BANKING		
ALASKA, ARIZONA, CALIFORNIA, CONNECTICUT, DELAWARE, HAWAII, IDAHO, MAINE, MARYLAND, NEVADA, NEW JERSEY, NORTH CAROLINA, OREGON, RHODE ISLAND, SOUTH CAROLINA, SOUTH DAKOTA, UTAH, VERMONT, VIRGINIA, WASHINGTON, AND D.C.		
NUMBER OF BANKS NUMBER OF BRANCHES		1,684 13,040
STATES WITH LIMITED BRANCH BANKING (LIMITED USUALLY TO COUNTY WHERE BANK'S HEAD OFFICE IS LOCATED OR TO CONTIGUOUS COUNTIES)		
ALABAMA, GEORGIA, INDIANA, KENTUCKY, LOUISIANA, MASSACHUSETTS, MICHIGAN, MISSISSIPPI, NEW HAMPSHIRE, NEW MEXICO, NEW YORK, OHIO, PENNSYLVANIA, TENNESSEE, AND WISCONSIN		
NUMBER OF BANKS NUMBER OF BRANCHES		4,880 14,730
STATES WITH UNIT BANKING (BRANCH BANKING STRICTLY LIMITED OR PROHIBITED)		
ARKANSAS, COLORADO, FLORIDA, ILLINOIS, IOWA, KANSAS, MINNESOTA, MISSOURI, MONTANA, NEBRASKA, NORTH DAKOTA, OKLAHOMA, TEXAS WEST VIRGINIA, AND WYOMING		
NUMBER OF BANKS NUMBER OF BRANCHES		8,490 2,190

2. COMPETITION

- Very large banks tend to be more innovative. They are more likely to experiment with and implement new systems and technology. Smaller banks are forced to respond in order to offer the same level of service. Typical examples are on-line inquiry and central information files (CIF).
- Banks will soon be experiencing increased competition with federal credit unions, which have recently been granted increased consumer serving abilities.

3. TECHNOLOGY

- Payment systems are becoming increasingly more automated. Examples are automated clearing houses (ACH), and pay-by-phone systems.
- Two industry trends are apparent:
 - Banks are going more on-line.
 - Banks are shifting to user-oriented terminals for both inquiry and cash transactions.
- Banks are making increased use of mini and microprocessors in their networks for central processor front ends, for communications networking, for authorization/transaction systems, and for some distributed processing at the branch level.

IV USE OF EDP

IV USE OF EDP

A. USE OF COMPUTERS IN CORRESPONDENT BANKING

1. METHODOLOGY

- A random sample of 80 firms was selected from the 1977 American Bank Directory. Half were small banks who have the potential to use the "correspondent services" of their larger counterparts. Forty banks were then interviewed. Geographic dispersion was applied to the sample.

2. UTILIZATION OF CORRESPONDENT BANKING PROCESSING SERVICES

- As shown in Exhibit IV-1, 47.5% of all banks interviewed used correspondent data processing services.
- All of the banks interviewed either had their own EDP equipment to accomplish correspondent data processing or used the services of another bank or a correspondent data processing vendor.
- The use of outside processing services varies directly with size. The small banks are the greatest (75%) users of outside processing services, while very large banks have their own EDP equipment and do not use outside correspondent bank processing services.

EXHIBIT IV-1

RESPONDENTS' USE OF CORRESPONDENT BANK DATA PROCESSING SERVICES

EDP USAGE	BANK SIZE				TOTAL
	SMALL	MEDIUM	LARGE	VERY LARGE	
IN-HOUSE COMPUTER PROCESSING	5	5	5	6	21
OUTSIDE PROCESSING SERVICES	15	3	1	0	19
TOTAL NUMBER	20	8	6	6	40
PERCENTAGE OF FIRMS WITH IN-HOUSE PROCESSING	25.0%	62.5%	83.3%	100.0%	52.5%
PERCENTAGE OF FIRMS USING OUTSIDE PROCESSING SERVICES	75.0%	37.5%	16.7%	0 %	47.5%

3. CORRESPONDENT BANKING APPLICATIONS SOFTWARE

- Of the total number of EDP users with in-house computers, only 9.5% claim to develop all their own applications software as requirements arise. The remainder purchase (or lease) software products and services from time to time, as shown in Exhibit IV-2.
- Most (57%) of the EDP managers both develop and purchase (lease) the required applications packages. Typical responses are shown in Exhibit IV-3.

4. IN-HOUSE EDP VERSUS COMPUTER SERVICES DECISION

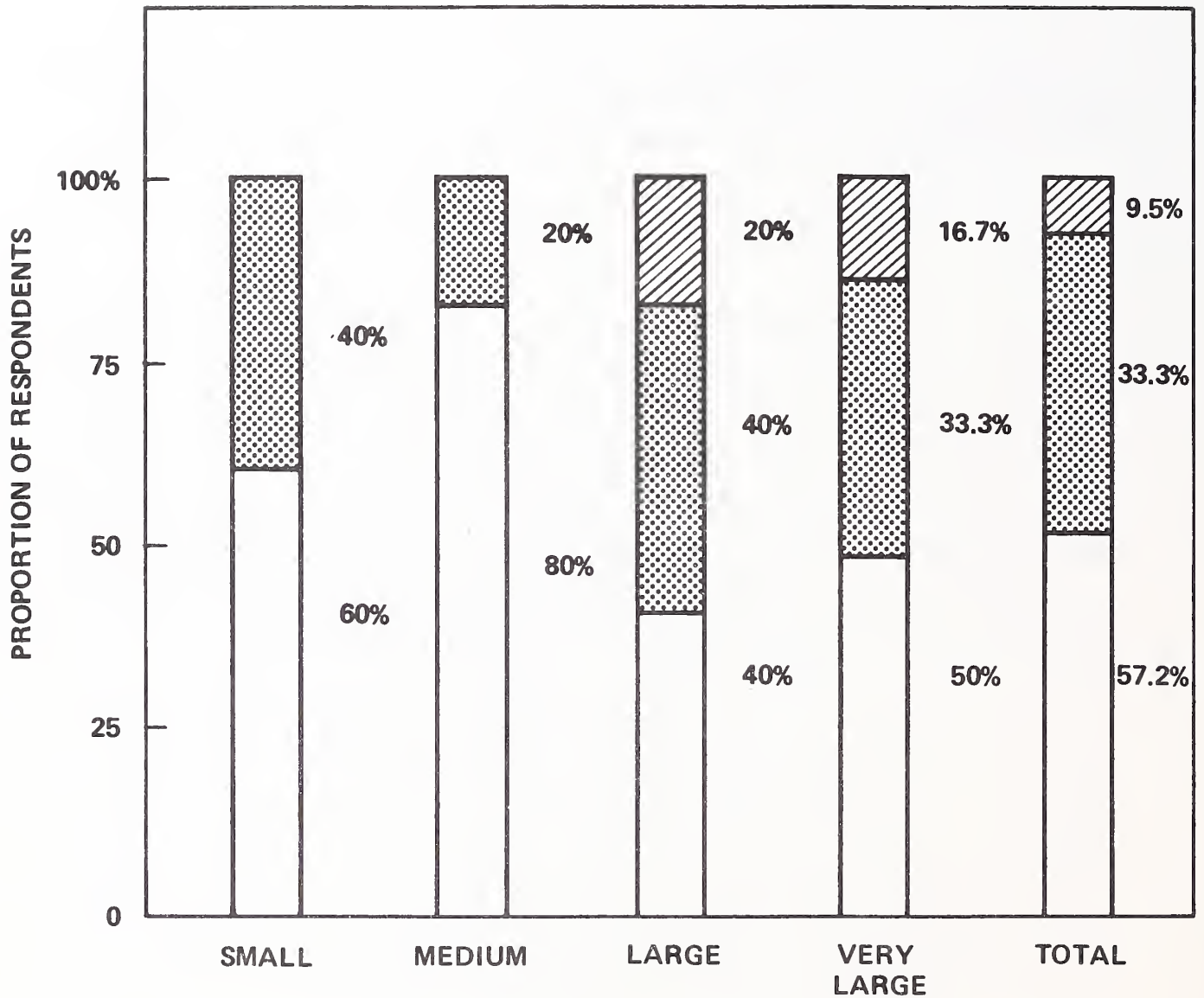
- The option to install EDP or use outside correspondent banking data services is primarily economic and correlated to bank deposit size. Small banks with deposits of less than \$10 million are effectively tied to their larger correspondent bank for a wide variety of services; one of which is correspondent data processing. Small banks with deposits over \$60 million have some choice between getting their own equipment or using outside correspondent data processing services. Typical respondent reasons for choosing in-house vs. outside services are found in Exhibit IV-4.
- The distribution of currently installed EDP systems is shown in Exhibit IV-5. All of the systems had been installed at least two years. Five (24%) of respondents with in-house EDP indicated they would be changing equipment within the next three years. None gave an indication they would be giving up their equipment. Three (16%) respondents who are currently using outside services indicated they were considering going in-house or forming joint ventures for correspondent data processing within three years.

5. IMPORTANCE OF EDP IN CORRESPONDENT BANKING

- Ninety percent of the respondents felt that the functions which were bundled as correspondent banking data processing were vital to the competitive position of their bank in the marketplace. Respondents were concerned that they be able to offer the same services as banks of equivalent and larger size.

EXHIBIT IV-2

SOURCE OF APPLICATIONS SOFTWARE BY RESPONDENTS WITH IN-HOUSE COMPUTERS



DEVELOPS ALL APPLICATIONS SOFTWARE IN-HOUSE



BUYS ALL APPLICATIONS SOFTWARE PRODUCTS



BOTH DEVELOPS AND BUYS SOFTWARE PRODUCTS

EXHIBIT IV-3

SOURCE OF APPLICATIONS SOFTWARE BY RESPONDENTS WITH IN-HOUSE COMPUTERS - TYPICAL COMMENTS

- "I evaluate outside packages first before considering in-house development."
- "I can get most anything I need from software vendors or other banks - my biggest problem is software maintenance."
- "I locate the best package available on the outside and modify the package to meet our particular needs."
- "The first time around we did it all in-house - I won't do it that way again."
- "It's always a combination - you can't buy a package that meets all your needs -- but most vendors will modify the package and we do the rest."

EXHIBIT IV-4

RESPONDENTS' REASONS FOR IN-HOUSE EDP VS. OUTSIDE DATA

PROCESSING SERVICES FOR CORRESPONDENT BANKING

- "We're a new bank - we're pretty much dependent on our Los Angeles correspondent to provide most of our correspondent services including data processing." (Small bank/assets less than \$10 million)
- "We want our own in-house system. The board of directors feels this is part and parcel of our being independent. (Small bank/assets less than \$60 million)
- "We might get our own system in 2-3 years. Right now we're better off using the service in Portland." (Medium sized bank/assets less than \$200 million)
- "We could get our own equipment but we couldn't afford all the on-line services we now get from our existing service." (Small bank/assets less than \$60 million)
- "By using facilities management we get additional revenues from processing smaller banks in our area, which reduces our overall costs." (Medium sized bank/assets less than \$500 million)
- "I use outside services so I can offer the same customer services as the large banks." (Small bank/assets less than \$60 million)

EXHIBIT IV-5

DISTRIBUTION OF RESPONDENTS' INSTALLED EDP EQUIPMENT

MANUFACTURER	SMALL			MEDIUM			LARGE			VERY LARGE			TOTAL INSTAL- LATIONS
	INSTAL- LATIONS	MODEL	QTY	INSTAL- LATIONS	MODEL	QTY	INSTAL- LATIONS	MODEL	QTY	INSTAL- LATIONS	MODEL	QTY	
IBM				1	370/135	1	1	370/158	2	1	370/168	3	11
					370/138	1	1	370/158	1	1	370/155	1	
				1	370/145	1		370/145	1		370/158	1	
							1	370/158	1				
							1	370/155	2	2	370/158	1	
BURROUGHS	1	B500	2	2	B2700	1				1	B6700		10
	2	B500	1	1	B3700	1					B4800		
	2	B2700	1							1	B7700		
TOTAL INSTALLATION	5			5			5			6			21

6. CENTRALIZED DATA PROCESSING

- Forty-seven percent of the respondents felt that the trend toward centralizing correspondent bank data processing functions was still strong (see Exhibit IV-6). Another 27% felt that the trend would go both ways for correspondent banking. For banks located less than 200 miles from the correspondent bank data processing center, the trend would remain centralized, but at greater distances the trend would turn to distributed processing.

7. DISTRIBUTED DATA PROCESSING

- Although the current trend is still strongly toward centralized data processing, nearly 43% of the respondents (as shown in Exhibit IV-7) were interested in distributed data processing for correspondent banking data processing. Fifty-three percent of those respondents interested felt that distributed processing would impact correspondent banking data processing in the 1980s.
- Respondents were using or planning to use basic forms of distributed processing in two ways:
 - Through the use of satellite systems to the main central processor for data acquisition and report production.
 - Through the use of minis to capture, verify, and transmit MICR check data on a remote computing basis (see Chapter V: Applications Analysis).
- Nearly half (47%) of the respondents felt that minicomputers would impact correspondent banking data processing, with the greatest impact being felt in the 1980s.

8. INCREASING USE OF ON-LINE SYSTEMS

- Respondents reported a continuing shift to increased use of on-line systems in correspondent bank data processing applications. Banks are catching up with the Savings and Loan Industry in the use of on-line teller terminals for handling

EXHIBIT IV-6

**RESPONDENTS' ATTITUDES TOWARD CENTRALIZED PROCESSING VERSUS
DISTRIBUTED PROCESSING FOR CORRESPONDENT BANK PROCESSING**

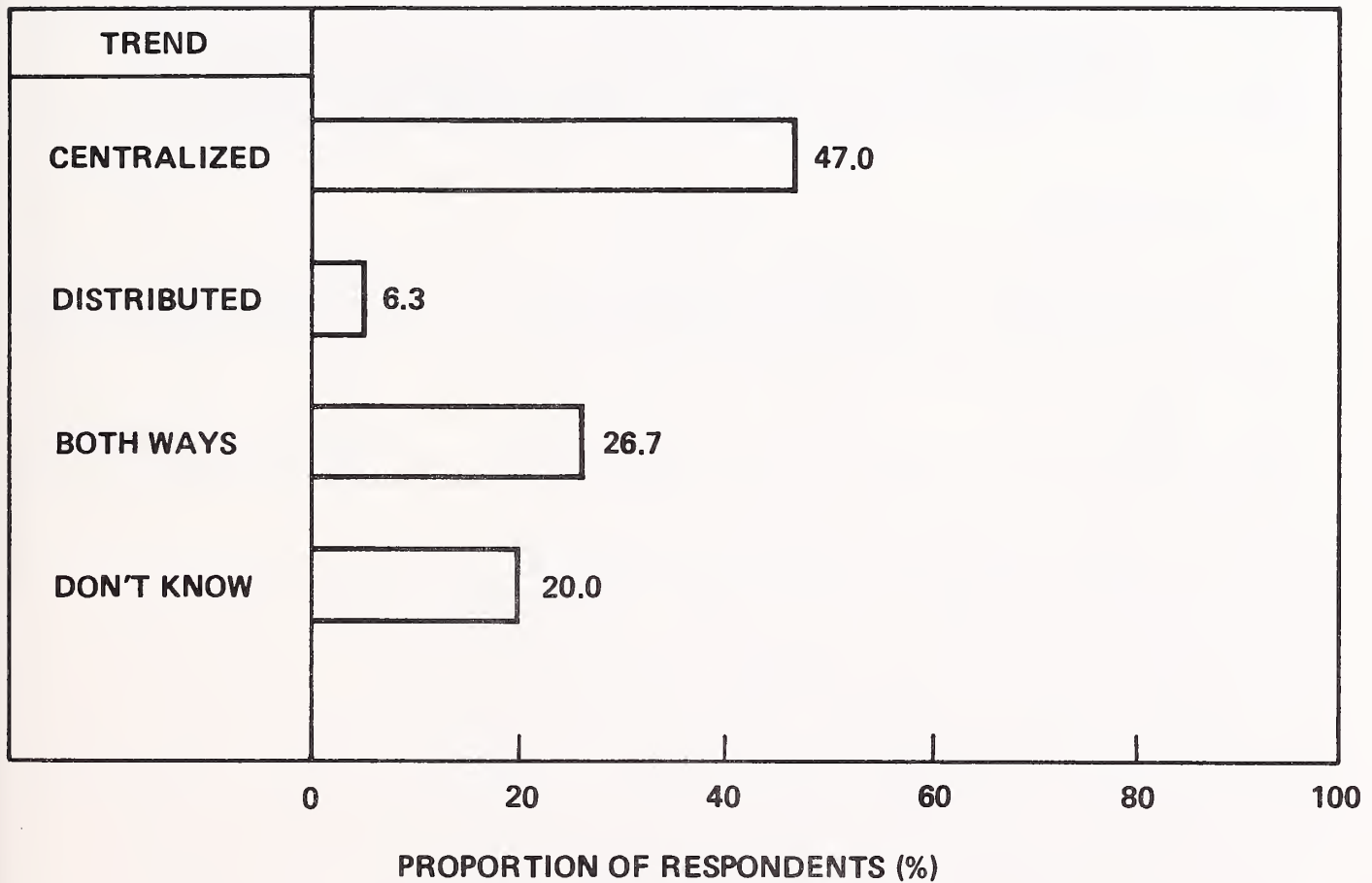


EXHIBIT IV-7

**RESPONDENTS' ATTITUDES TOWARD DISTRIBUTED DATA PROCESSING FOR
CORRESPONDENT BANK PROCESSING**

RESPONDENTS' ATTITUDES	NUMBER OF RESPONDENTS				%
	1979	1980	IN 1980s	TOTAL	
INTERESTED	3	5	9	17	42.5
NOT INTERESTED	—	—	—	23	57.5
TOTAL				40	100.0%

the savings functions. Over 36% of the respondents were accomplishing savings on-line. Many (43%) of respondents were also making use of interactive video terminals for inquiry and file maintenance. Other uses of on-line systems for correspondent banking are discussed in Chapter V: Applications Analysis.

9. CENTRAL INFORMATION FILES (CIF)

- Respondents are making increased use of data base management systems in connection with correspondent banking data systems. Sixty percent of respondents attached high importance to central information files (CIF) for such functions as inquiry, file maintenance and "memo posting." Respondents report that they are shifting from providing revenues on an "account" basis to servicing on a "customer" basis.

B. EXPENDITURES FOR CORRESPONDENT BANKING

I. METHODOLOGY

- The functions included in correspondent banking are defined in Chapter II. The total cost required by all banks to process the correspondent functions was determined by using a combination of respondent interviews and industry data to develop the variable "EDP cost/\$ million in commercial bank deposits," for banks in each size category. Using total deposits for banks by size (Exhibit IV-5) total expenditures for each bank size were determined. The proportion banks of each size category spend on in-house vs. outside services was then determined, using a combination of the respondent interviews (Exhibit IV-1) and industry data. The distribution is shown in Exhibit IV-8.

EXHIBIT IV-8

DISTRIBUTION OF EDP UTILIZATION ACCORDING TO BANK DEPOSIT SIZE (1976)

EDP USAGE	SMALL		MEDIUM	LARGE	VERY LARGE
	DEPOSITS <\$10M	DEPOSITS \$10-\$100M	DEPOSITS \$100-500M	DEPOSITS \$500M-\$1B	DEPOSITS >\$1B
IN-HOUSE EDP	8.8%	37.1%	79.0%	92.0%	95.0%
OUTSIDE SERVICES	54.6	59.5	20.0	8.0	5.0
NOT AUTOMATED	36.6	3.4	1.0	0	0
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

2. CORRESPONDENT BANKING EDP EXPENDITURES

- Total 1977 EDP expenditures for the functions bundled in correspondent banking are over \$2.6 billion, of which \$641 million or nearly 25% is utilized for external computer services. The remainder is used internally, either in-house, by joint ventures, or through multi-bank holding companies. It is important to recognize that the \$1.9 billion in EDP expenditures used internally are for the same functions (Demand deposit processing, savings, etc.) as are used by correspondent banks as computer services. Some of the internal EDP expenditures represent potential revenue for computer services vendors (see Chapter VII: Competition).
- The ratio of EDP cost/\$ million in bank deposits is highest for small banks with deposits less than \$10 million because the smallest banks tend to be more recently formed and experience high start-up costs, as well as having a smaller base over which to spread EDP costs (see Exhibit IV-9).
- Small banks which have assets between \$10 and \$100 million have the greatest (\$335 million) computer services expenditures, making them a prime target of opportunity for computer services vendors.

3. GROWTH IN CORRESPONDENT BANKING COMPUTER SERVICES EXPENDITURES

- Expenditures for correspondent banking computer services will grow from \$641 million in 1977 to over \$1.3 billion by 1982 for a compounded average annual growth rate (AAGR) of nearly 16% over 5 years (see Exhibit IV-10). The EDP expenditures for processing equivalent to the correspondent banking functions will grow at an even faster rate (AAGR nearly 19%) due to the rapid growth of very large banks and multi-bank holding companies.

EXHIBIT IV-9

DISTRIBUTION OF EDP EXPENDITURES FOR THE CORRESPONDENT BANKING
FUNCTIONS RELATED TO BANK SIZE
(1977)

BANK SIZE ITEM	SMALL		MEDIUM ASSETS >\$100≤\$500M	LARGE ASSETS >\$500M≤1BIL	VERY LARGE ASSETS >\$1BIL	TOTAL
	ASSETS ≤\$10M	ASSETS >\$10≤\$100M				
DEPOSITS	\$ 8.03B	\$268.08B	\$158.98B	\$ 81.94B	\$586.84B	\$1,103.87B
EDP EXPENDITURES	29.30M	578.7M	355.4M	194.4M	1.46B	2.62B
COMPUTER SERVICES EXPENDITURES	20.10M	334.7M	108.4M	27.6M	130.30M	\$721.10M
EDP COST/\$ MILLION IN BANK DEPOSITS	\$3.56K	\$2.16K	\$2.25K	\$2.35K	\$2.50K	—
EDP EXPENDITURES FOR COMPUTER SERVICES (%)	68.6%	57.8%	30.5%	14.2%	8.9%	27.5%

EXHIBIT IV-10

FORECAST OF EDP EXPENDITURES FOR
DEMAND DEPOSITS, SAVINGS, LOANS AND RELATED FUNCTIONS
(1977/1982)

EDP EXPENDITURES	1977	1982	AAGR (%)
	(\$ MILLION)		
IN-HOUSE COMPUTER PROCESSING	\$1,975	\$4,669	18.8%
COMPUTER SERVICES	641	1,335	15.8
TOTAL	\$2,616	\$6,004	18.0%

V APPLICATIONS ANALYSIS

V APPLICATIONS ANALYSIS

A. FUNCTIONAL USE OF EDP IN CORRESPONDENT BANKING

I. INTRODUCTION

- There are four functional areas in correspondent banking. These areas apply to banks of all sizes whether they use their own in-house EDP or use data processing services from their correspondent or a computer services vendor. Correspondent banking functions relate to commercial or day-to-day bank operations of:
 - Demand deposits.
 - Savings.
 - Loans.
 - Administration.
- Correspondent banking is accomplished by specialty applications packages.
- In this chapter the EDP applications relating to each function are briefly described, and the relative importance of EDP to each is illustrated.

- Bank size frequently determines how EDP is used to support or accomplish a given correspondent banking function. The degree of EDP utilization for each application as a function of bank size and mode of service delivery is presented in Exhibits V-1 through V-4.

2. DEMAND DEPOSIT FUNCTION

- The demand deposit function includes all day-to-day operations that comprise the customer interface with checking accounts (see Exhibit V-1).
- The demand deposit function is the most complex of all the correspondent banking functions. The transaction volumes are by far the largest. Although demand deposits are only 40% of all bank deposits, 60-65% of all correspondent banking expenditures are utilized for this function.
- Approximately 30% of all checks written by consumers are cleared directly through the bank of origin. The remainder flow through a clearing process which is described later in this chapter.
- Demand deposit accounting is accomplished primarily in a batch mode, although the use of remote batch is growing. Some larger banks are using interactive processing for "memo posting" (creation of temporary files prior to batch updating of master files) of cash transactions.
- Overdraft protection alerts the affected bank of potential or actual customer overdrafts by issuing special reports concurrent with daily batch processing. Overdraft protection is a by-product of an interactive inquiry/memo posting system.
- Revolving credit automatically extends personal credit to customers when overdrafts would otherwise occur. The process occurs as a result of the daily batch processing of demand deposit accounts.

CORRESPONDENT BANKING
EDP UTILIZATION: DEMAND DEPOSIT FUNCTION

APPLICATIONS	BANK SIZE											
	VERY LARGE			LARGE			MEDIUM			SMALL		
	IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT
DEMAND DEPOSIT ACCOUNTING	XXX	X	X	XXX	X	X	XX	XX	X	X	XXX	-
OVERDRAFT PROTECTION	XXX	X	X	XXX	X	X	XX	XX	X	X	XX	-
REVOLVING CREDIT	XXX	X	XX	XXX	X	X	XX	XX	X	X	XX	-
PROOF AND TRANSIT	XXX	X	-	XXX	X	-	XX	XX	-	X	XXX	-
ACCOUNT RECONCILIATION	XXX	X	-	XXX	X	-	XX	XX	-	X	XX	-
STATEMENT PREPARATION	XXX	X	-	XXX	X	-	XX	XX	-	X	XXX	-
NOW ACCOUNTING	XX	X	XX	XX	X	X	X	XX	X	-	XX	-

-	NOT USED	IH	-	IN-HOUSE
X	LESS THAN 25%	CS	-	OUTSIDE SERVICES
XX	BETWEEN 25% AND 75%	INT	-	INTERACTIVE REMOTE COMPUTING
XXX	OVER 75%			

EXHIBIT V-2

CORRESPONDENT BANKING EDP UTILIZATION: SAVINGS FUNCTION

APPLICATIONS	BANK SIZE											
	VERY LARGE			LARGE			MEDIUM			SMALL		
	IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT
PASSBOOK SAVINGS	XXX	X	XXX	XXX	X	XX	XX	XXX	XX	X	XXX	X
TIME DEPOSITS	XXX	X	XXX	XXX	X	XX	XX	XXX	XX	X	XXX	X
CERTIFICATE OF DEPOSIT	XXX	X	XXX	XXX	X	X	XX	XX	X	X	XXX	-
CHRISTMAS/ TRAVEL CLUBS	XXX	X	XX	XXX	X	X	XX	XX	X	X	XXX	-
IRA & KEOGH ACCOUNTS	XXX	X	XX	XX	X	X	XX	XX	X	X	XX	-

- NOT USED
 X LESS THAN 25%
 XX BETWEEN 25% AND 75%
 XXX OVER 75%

IH - IN-HOUSE
 CS - OUTSIDE SERVICES
 INT - INTERACTIVE REMOTE COMPUTING

EXHIBIT V-3

CORRESPONDENT BANKING EDP UTILIZATION: LOAN FUNCTION

APPLICATIONS	BANK SIZE											
	VERY LARGE			LARGE			MEDIUM			SMALL		
	IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT
COMMERCIAL LOANS	XXX	X	X	XXX	X	X	X	X	-	-	-	-
PERSONAL LOANS	XXX	X	X	XXX	X	X	XX	XX	X	X	XXX	-
INSTALLMENT LOANS	XXX	X	XX	XXX	X	X	XX	XX	X	X	XXX	-
MORTGAGE LOANS	XXX	X	X	XXX	X	X	XX	XX	X	X	XXX	-

- NOT USED

X LESS THAN 25%

XX BETWEEN 25% AND 75%

XXX OVER 75%

IH - IN-HOUSE

CS - OUTSIDE SERVICES

INT - INTERACTIVE REMOTE COMPUTING

EXHIBIT V-4

CORRESPONDENT BANKING EDP UTILIZATION: ADMINISTRATIVE FUNCTION

APPLICATIONS	BANK SIZE											
	VERY LARGE			LARGE			MEDIUM			SMALL		
	IH	CS	INT	IH	CS	INT	IH	CS	INT	IH	CS	INT
CENTRAL INFORMATION FILE (CIF)	XXX	X	XXX	XXX	X	XX	X	XXX	XX	-	XXX	X
ON-LINE INQUIRY	XXX	X	XXX	XXX	X	XXX	X	XX	XX	-	XXX	X
ON-LINE POSTING	XXX	X	XXX	XXX	X	XX	X	XX	X	-	-	-
ON-LINE ACCOUNT MAINTENANCE	XXX	X	XXX	XXX	X	XX	XX	XXX	XX	-	XXX	X
GENERAL LEDGER	XXX	X	-	XXX	X	-	XX	XX	-	-	XXX	-
CONSOLIDATED CUSTOMER STATEMENTS	XX	X	-	X	X	-	X	X	-	-	X	-

- NOT USED
 X LESS THAN 25%
 XX BETWEEN 25% AND 75%
 XXX OVER 75%

IN - IN-HOUSE
 CS - OUTSIDE SERVICES
 INT - INTERACTIVE REMOTE COMPUTING

- The proof and transit application can be accomplished at the bank itself prior to sending the checks to the processing center, or by the processing center in a batch mode prior to processing the demand deposit application. Newer systems permit single pocket proofing at the bank and remote transmission of all items to the processing center.
- Account reconciliation is the process of sorting, listing, and reconciling outstanding checks per account. It is accomplished in the batch mode by the processing center.
- Statement preparation is accomplished monthly on a batch basis by the processing center. When account reconciliation is used with statement preparation, the checks are returned to the bank with the statements. Otherwise, the statement and checks are combined by the bank tellers.
- Now (Negotiated Order of Withdrawal) accounts are interest bearing demand deposit accounts. They are handled by a few processing centers, primarily in New England, on a batch or remote batch basis.

3. SAVINGS FUNCTION

- The applications required to service the savings function are shown in Exhibit V-2. This function includes the day-to-day banking operations that comprise the consumer interface for savings handling.
- Savings represents 60% of the total bank deposits, 24% of which comprise passbook savings. The savings function utilizes about 30% of all correspondent banking expenditures.
- Savings transactions occur at the bank of origin. On the average, 2.5 transactions per account, per month are executed.
- Savings applications are currently accomplished primarily in a batch or remote batch mode. Banks are rapidly shifting the savings function to operate in an interactive mode, using either "memo posting" or real-time file updating for on-line teller transactions.

4. LOAN FUNCTION

- The applications required to service the loan function are shown in Exhibit V-3. This function includes the customer interface for both commercial and consumer lending.
- Loan transactions occur at the bank of origin. The loan function utilizes 5-10% of all correspondent banking expenditures.
- The commercial loan application is accomplished primarily in a batch mode although the use of remote batch is growing.
- Banks use interactive computing to accomplish the personal, installment, and mortgage loan applications when they already have the on-line systems to do the savings function. Otherwise the applications are processed in the batch and sometimes the remote batch modes.

5. ADMINISTRATIVE FUNCTION

- Applications within the administrative function are shown in Exhibit V-4. The applications cut across the demand deposit, savings, and loan functions.
- EDP expenditures for the administrative functions are embedded in the other three functions.
- The central information file (CIF) is a data base management application. CIF is rapidly increasing in importance in correspondent banking. Although CIF can be operated in the batch mode, it is central to interactive remote computing for the savings, loan, and demand deposit functions.
- The on-line inquiry/"memo posting" application is accomplished in the interactive mode. The application allows teller/customer inquiry into demand, savings and loan accounts by customer name or account number. "Memo posting" creates an entry on a transaction file which gives the outward appearance of real-time file updating whereas in reality the master file is updated later in the batch mode.

- Account maintenance is currently accomplished primarily in a batch or remote batch mode. Banks are rapidly shifting to the use of administrative CRT terminals to accomplish account file maintenance either through "memo posting" or directly in real-time.
- The general ledger (GL) application is produced as a by-product of processing the savings, loan, and demand deposit functions. General ledger systems for correspondent banking provide for controls (such as journaling) for both multi-branch and multi-bank applications.
- Implementing the CIF application allows banks to provide service on a customer basis as opposed to an account basis. The service culminates in a consolidated statement of all savings, loan, and demand transactions against all customer accounts.

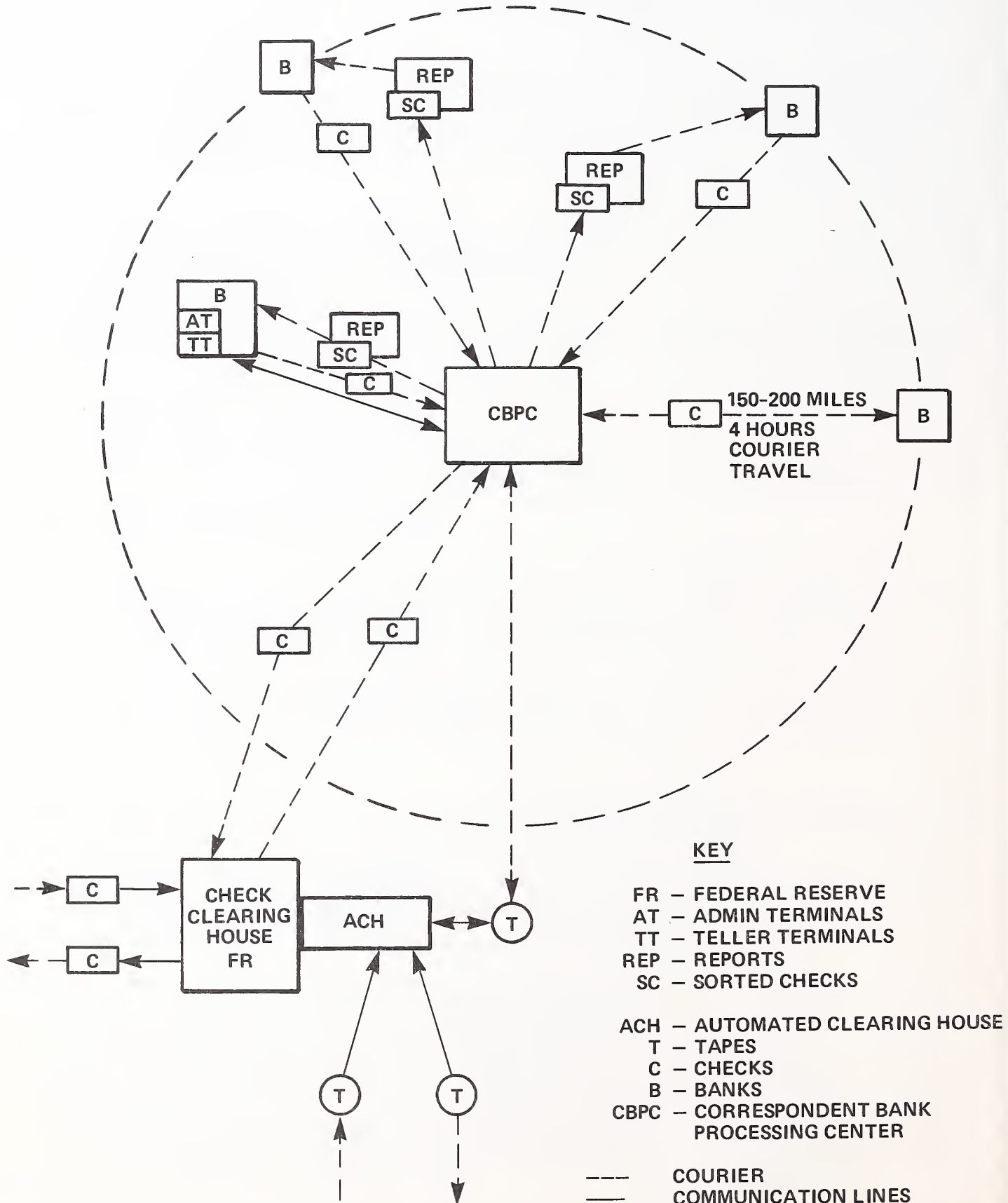
B. TECHNICAL RESOURCE REQUIREMENTS

I. EXISTING SYSTEMS

- Systems for demand deposit accounting are illustrated in Exhibit V-5.
- Existing systems are almost completely batch oriented.
- The systems are travel distance limited:
 - The maximum time of courier travel is 4-5 hours. Banks close at 3 p.m. Transactions after 3 p.m. are processed with the next days transactions. The courier service gets the items no later than 5 p.m. for delivery to the DP center by 9 p.m. The processing center must have the sorted checks and printed output available for courier return by 5 a.m. for return to the banks no later than 9 a.m. Most respondents felt the time constraints were tight but realistic. There are times when some real upsets occur. If economic, banks would prefer an electronic means of item transmission.

EXHIBIT V-5

CORRESPONDENT BANK PROCESSING EXISTING SYSTEMS



- The courier travel constraints of four hours result in over 200 correspondent bank processing centers located at approximately 200 mile intervals.
- Larger banks offer correspondents the ability to do file maintenance and inquiry using administrative CRT terminals on an interactive basis on dedicated leased lines (1200-2400 bps).
- Larger banks offer correspondents the ability to do "memo posting" of demand deposit cash transactions using teller (IBM, NCR, Burroughs, FDSI) terminals.
- Proof and transit is either accomplished at the bank or at the correspondent bank processing center using multi-pocket Burroughs or NCR proofing machines. If done by the bank, the proof is checked by the processing center before the items are processed.
- Only 40% of the demand items are entered at the bank of origin. The majority of items are received from the check clearing house (usually located at the Federal Reserve) or from the automated clearing house (ACH), often co-located at the Federal Reserve.
- The correspondent bank processing center (CBPC) sends the transit checks to the clearing house and receives from the clearing house the intercept checks for its users. The CBPC proofs the items it receives from the check clearing house for its users before accomplishing demand deposit processing.
- Automated clearing houses (ACHs) have been established by member banks to process automated transactions (primarily on magnetic tape) such as social security, government payrolls, automatic payments (insurance, savings bonds, etc.). Over 67% of the respondents interviewed were members of an ACH, receiving items directly or by intercept through their respective CBPC.

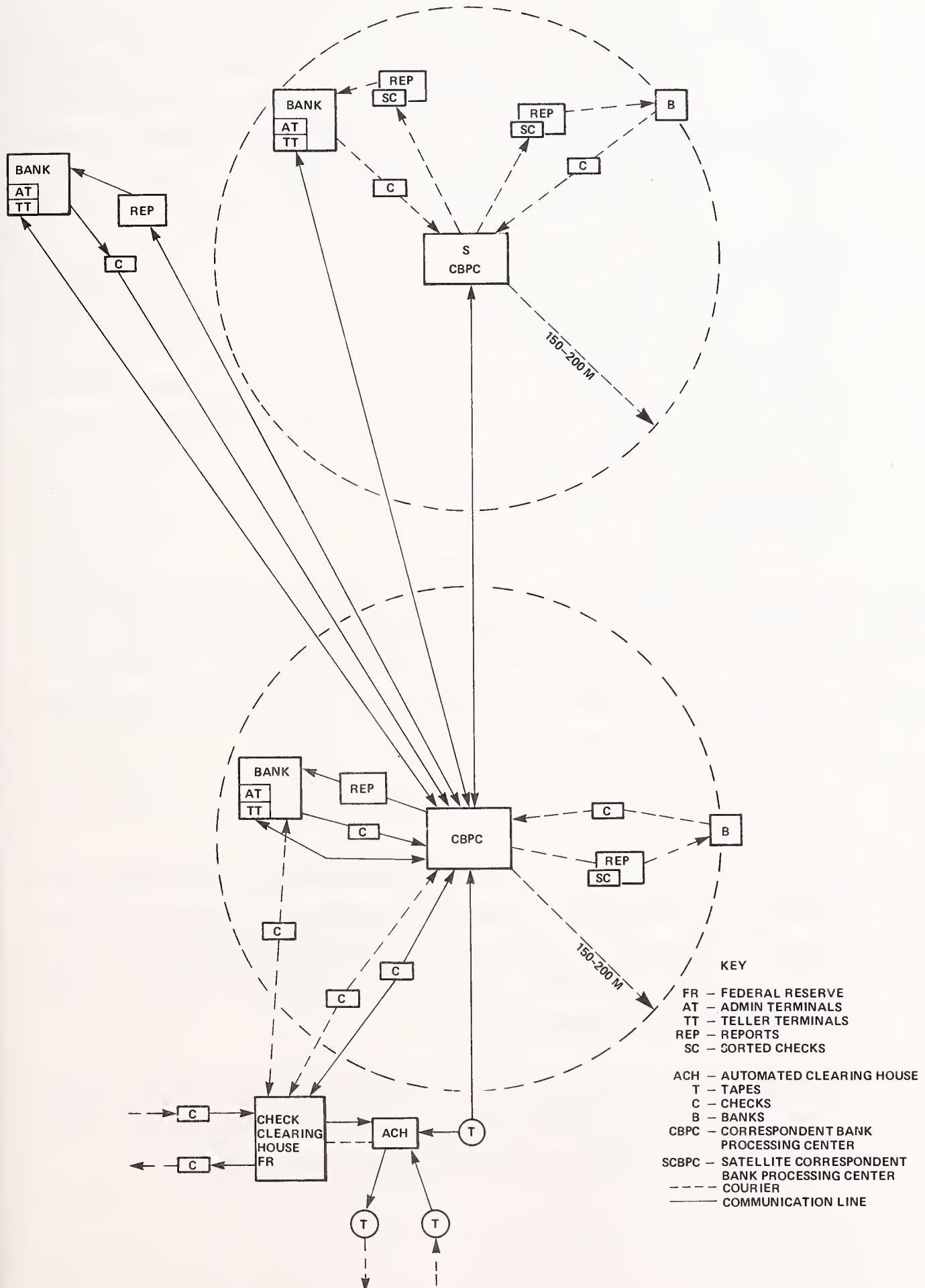
- o Items for the savings and loan function are processed through the same framework as for the demand deposit function. Use of teller and administrative terminals is greater for processing savings transactions on-line than for either demand or loan transactions. The savings and loan functions do not use either the clearing house or ACH portions of the third-party payments systems.
- o The need to have the correspondent banking processing center local (within 200 miles) was important to 86% of the respondents. This need results from the banks dependence on ground transportation as described earlier.

2. EXTENDED SYSTEMS

- o In the extended system, illustrated in Exhibit V-6, centralized processing is still the trend, but distributed processing is beginning to be used. The 150-200 mile service radius, formerly limited by the demands of ground transportation, has been greatly extended. Some vendors are processing for banks over 1,500 miles away (see Chapter VII, Competitive Environment).
- o Correspondent bank processing centers have installed satellite processing systems, usually at a user's facility. Typical satellite systems are Burroughs 1700s or NCR 200s. The satellite systems concentrate the item processing for an area, proof and validate the input data, and transmit (4800 bps lines) the items on a remote batch basis to the CBPC. The data is processed and the results transmitted back to the satellite system which produces the output and sorts the items for return to the user banks.
- o Burroughs and NCR are currently testing minicomputer systems which accept MICR data encoded by a single pocket proof machine (NCR). The system (i.e., Burroughs SI000) transmits the items, proofed and validated to the CBPC on a remote batch basis (2400 bps lines). The processed data is returned to the mini for printing. The input which never leaves the bank is sorted by the mini system. The bank can get the transit (including ACH) items directly and complete its own clearing, or it can still let the CBPC act as intercept.

EXHIBIT V-6

CORRESPONDENT BANK PROCESSING EXTENDED SYSTEMS



- Retention of the "on us" checks at the originating bank was important to all respondents. Respondents felt that unlike credit card statements, it would be a long time before consumers would accept consolidated checking account statements without checks being returned. Four respondents felt that they would be able to produce consolidated statements and win customer acceptance of check truncation (checks are not returned to the writer) within the next five years.
- The trend toward on-line processing and the use of minicomputers and remote satellite systems works against the many small correspondent banking services vendors who lack the capital and technical expertise to support extended systems; consolidation will take place, working to the advantage of national computer services vendors.

3. SECURITY

- None of the respondents using correspondent banking processing services felt that security with respect to location of customer data was an issue. They feel they have the same degree of security whether customer information files are maintained in-house, with a correspondent bank, or with an independent computer services vendor.

4. SOFTWARE PRODUCTS

- Many respondents reported that the applications software developed for very large and large banks is not well suited for correspondent banking processing of medium to small banks. The respondents felt that a market exists for software products having multi-branch and multi-bank capability oriented toward correspondent banking processing centers.
- Respondents used a wide variety of purchased (leased) applications software which either they or the vendor modified for correspondent bank processing. Leading applications software products are listed in Exhibit V-7.

EXHIBIT V-7

**LEADING APPLICATIONS SOFTWARE PRODUCTS USED
BY MULTIPLE RESPONDENTS FOR CORRESPONDENT
DEMAND DEPOSITS, SAVINGS, LOANS AND RELATED FUNCTIONS**

PRODUCT NAME	VENDOR(S)	COMMENTS
PROOF & TRANSIT	TYMSHARE, BURROUGHS, UCC, FLORIDA SOFTWARE	PROCESSING BY BATCH AND REMOTE JOB ENTRY.
DEMAND DEPOSIT ACCOUNTING	TYMSHARE, BURROUGHS, UCC, FLORIDA SOFTWARE	PROCESSING BY BATCH AND REMOTE BATCH. SOME INTER- ACTIVE FOR "MEMO-POSTING"
SAVINGS	TYMSHARE, UCC, KRANSLEY, FLORIDA SOFTWARE	
CHRISTMAS CLUB	FIRST WISCONSIN, FLORIDA SOFTWARE	
CERTIFICATE OF DEPOSIT	FIRST WISCONSIN, FLORIDA SOFTWARE	APPLICATIONS ARE SPLIT BETWEEN BATCH, RJE AND ON-LINE PROCESSING.
INSTALLMENT LOANS	TYMSHARE, UCC, FLORIDA SOFTWARE, KRANSLEY	PACKAGES RUN BY BATCH AND RJE. A FEW RUN IN INTERACTIVE MODE.
MORTGAGE LOAN	UCC, CPI, FLORIDA SOFTWARE	RUN PRIMARILY IN BATCH MODE.
CIF/INQUIRY	UCC, IBM, FLORIDA SOFTWARE	RUN IN INTERACTIVE MODE.
COMMERCIAL LOAN	FLORIDA SOFTWARE, UCC, KRANSLEY, WEILAND	RUN IN BATCH OR RJE MODE.
REVOLVING CREDIT	KRANSLEY	RUN IN BATCH AND RJE MODE.
GENERAL LEDGER	MSA INC. FLORIDA SOFTWARE, UCC	RUN PRIMARILY IN BATCH MODE.

VI C O M P U T E R S E R V I C E S
M A R K E T S

VI COMPUTER SERVICES MARKETS

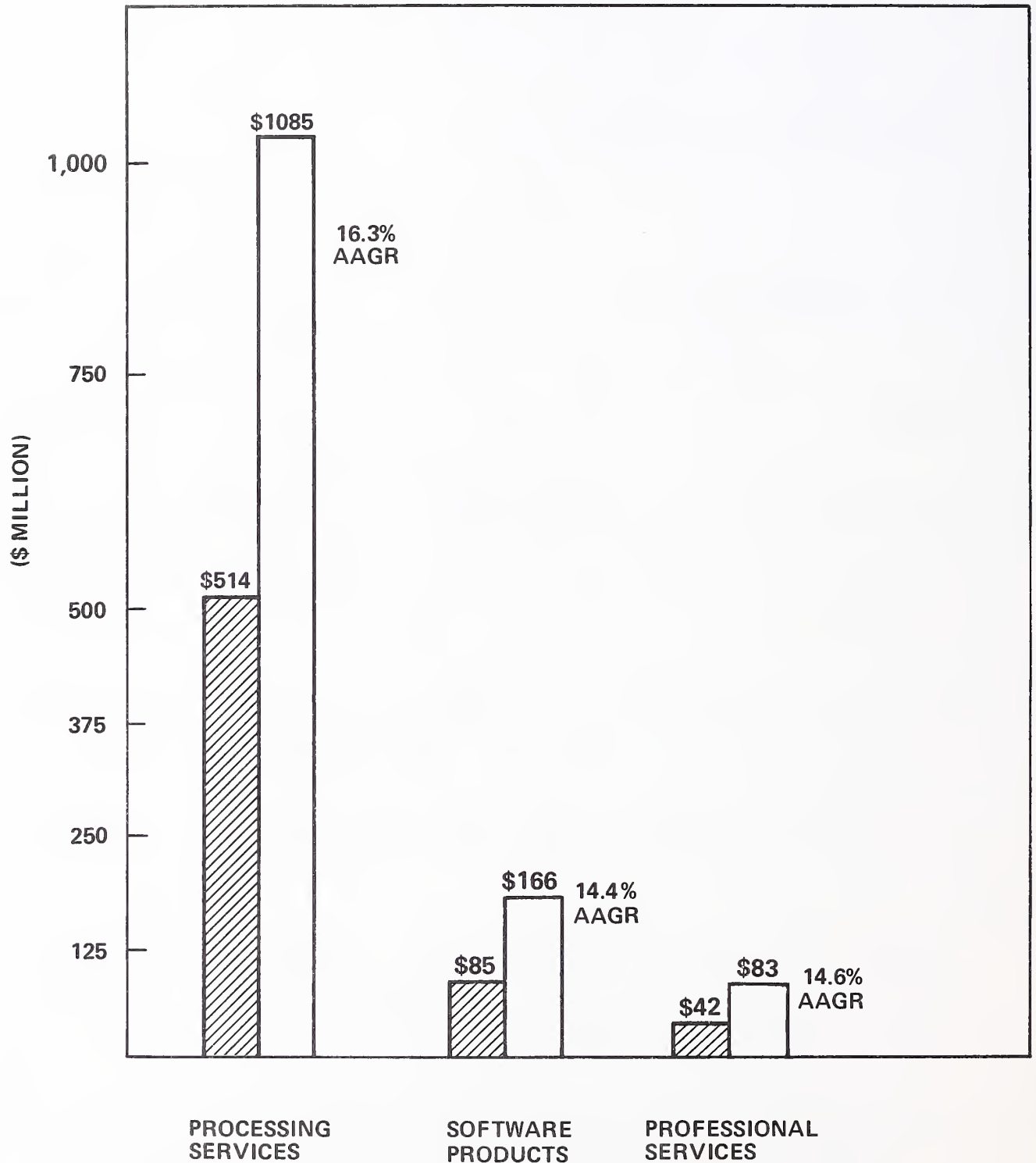
A. ANALYSIS AND FORECAST



I. GROWTH

- Because of movement to on-line systems and the increased use of electronic payment networks, computer services markets in correspondent bank services will keep pace with the annual growth rate for total computer services markets of 16%.
- This market represents 9.3% of the total computer services market (\$6.86 billion) in 1977 and will retain this share of the total (\$14.3 billion) in 1982.
- The growth of correspondent banking computer services is shown in Exhibit VI-1.
- The major portion (80%) of 1977 expenditures is used for processing services. There is a significant market for both software products (\$85 million) and professional services (\$42 million).
- Software products are specialty (applications) oriented. Acceleration in the growth of distributed processing would increase the growth of expenditures for software products over that forecasted (14% AAGR).

EXHIBIT VI-1

GROWTH OF CORRESPONDENT BANK COMPUTER SERVICES (1977/1982)



KEY:	TOTALS:
 1977	\$641 Million
 1982	\$1,334 Million 16% AAGR

- Respondents used professional services in conjunction with modifications to purchased (leased) software products and for software maintenance. Four, or 19%, of respondents having in-house systems used contract programming services for applications software modifications.
- None of the 16 respondents offering correspondent banking processing services used professional services to help users in start-up operations.

2. DELIVERY METHOD

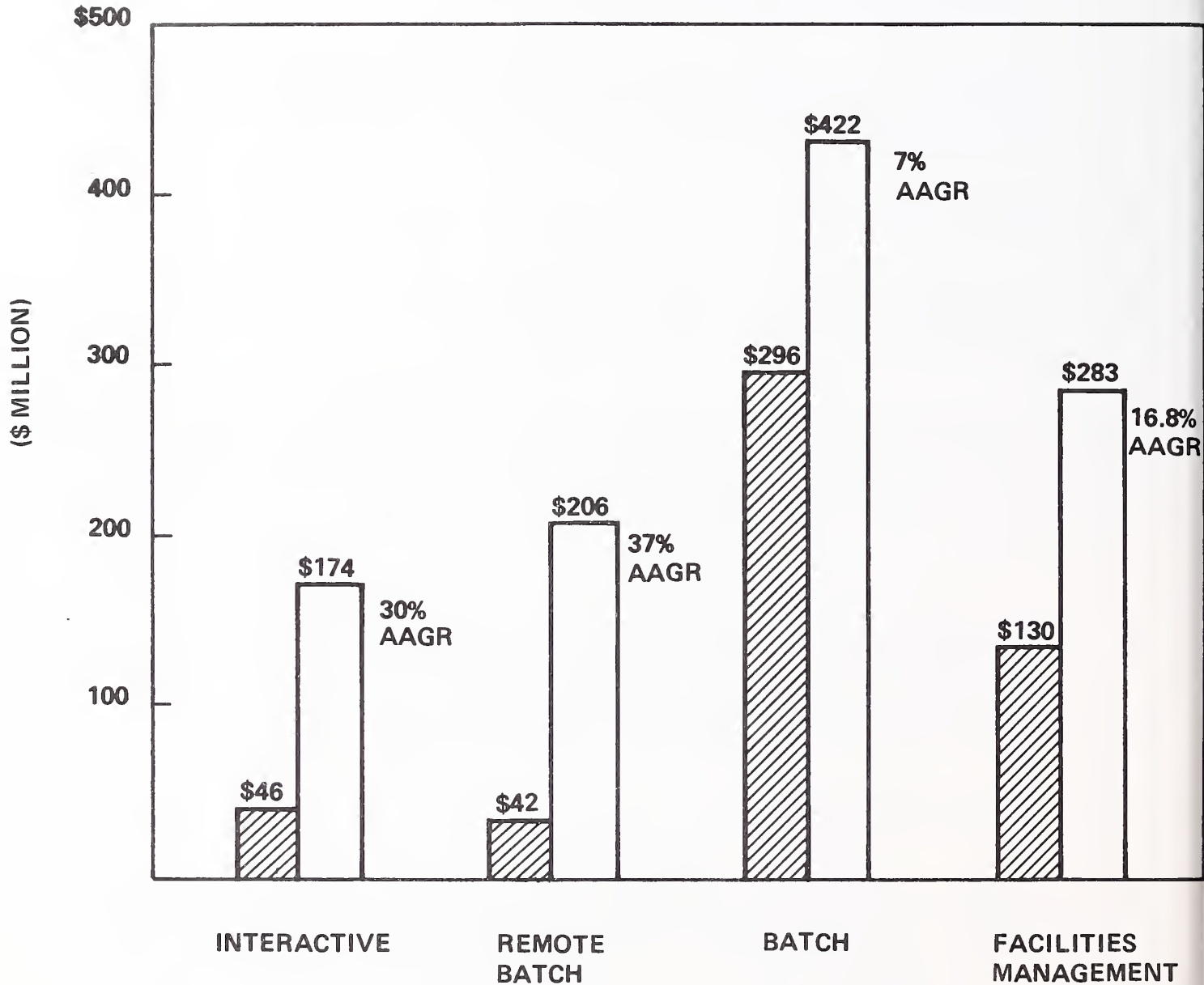
- The growth of computer processing services for correspondent banking by mode of service delivery is shown in Exhibit VI-2.
- The rapid growth of remote batch (37% AAGR) is due to the increased use of satellite processors and minicomputers as electronic networks replace ground transportation, and to the increased use of electronic payments system (i.e., ACH).
- The rapid growth of interactive computing (30% AAGR) results from many commercial banks shifting to on-line systems in response to competitive pressures from S&Ls and very large commercial banks.

3. DISTRIBUTION

- As shown in Exhibit VI-3, expenditures for computer services for correspondent banking come mainly from small banks, having 65% share of the total in 1977.
- Small banks with assets over \$10 million are in the majority (62%), hold significant deposits (24%), and obtain the majority (60%) of their computer processing from outside sources.
- Although very large banks are not large users of correspondent banking computer processing services, they make significant use of software and professional services for programming and software maintenance. The shift to

EXHIBIT VI-2

GROWTH OF COMPUTER PROCESSING SERVICES FOR CORRESPONDENT BANKS BY MODE OF SERVICE (1977/1982)



KEY:

TOTALS:



1977

\$514 Million

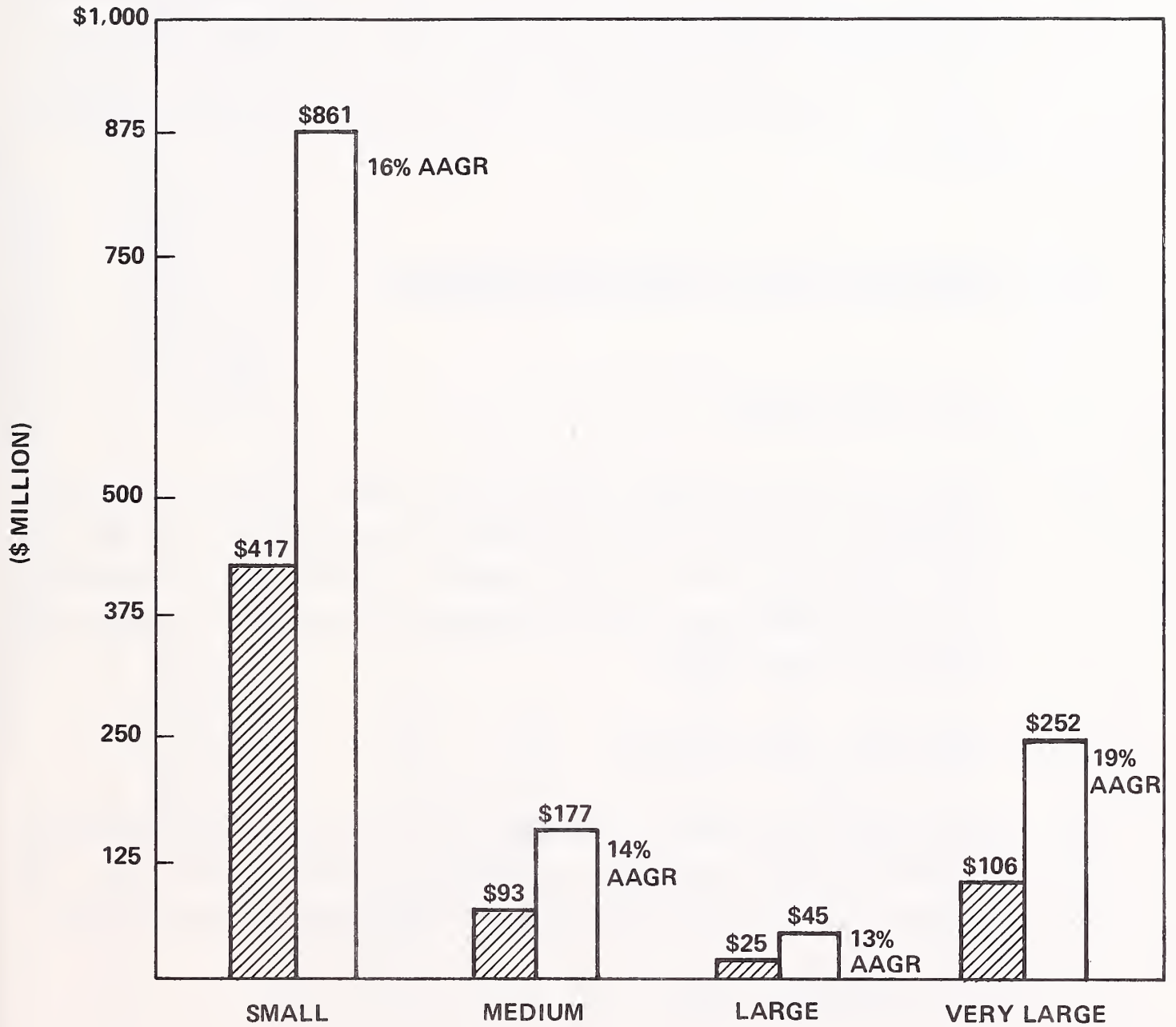


1982

\$1,085 Million
16% AAGR

EXHIBIT VI-3

EXPENDITURES FOR CORRESPONDENT BANK COMPUTER SERVICES BY BANK SIZE (1977/1982)



KEY:

▨ 1977

□ 1982

TOTALS:

\$641 Million

\$1,335 Million

16% AAGR

on-line systems, and the incorporation of satellite systems and minicomputers into banking networks accounts for the rapid growth of computer services (19% AAGR).

- Correspondent banking services are geographically concentrated in states with large population centers (see prior Exhibit IV-4). The Midwest region, with a large number of small banks (See Exhibit IV-3) will offer the most growth potential as legislative changes allow statewide banking and multi-bank holding companies.

B. ANALYSIS OF USER FUTURE REQUIREMENTS

1. PROCESSING MODES

- Over 60% of the respondents indicated they would be changing the method of handling one or more of the correspondent bank functions within the next five years. Exhibit VI-4 lists the most frequently mentioned anticipated changes. The responses highlight the shift to on-line systems and to the increased use of electronic payment systems.

2. ADDITIONAL APPLICATIONS

- Respondents are expected to implement new correspondent bank processing services by adding the additional applications shown in Exhibit VI-5. The responses are indicative of increased software application packages sales for:
 - Commercial loans.
 - Real estate management.
 - General ledger.

RESPONDENTS' PLANS FOR FUTURE CHANGES IN
CORRESPONDENT BANK PROCESSING

CORRESPONDENT BANK PROCESSING APPLICATION	PROCESSING MODE CHANGE TO		NUMBER OF RESPONDENTS INDICATING CHANGE
	REMOTE BATCH	INTERACTIVE	
MEMO POSTING		X	7
INQUIRY		X	9
ADMINISTRATIVE TERMINALS		X	9
TELLER TERMINALS		X	9
NEW TELLER TERMINALS		X	6
ATMS		X	6
SATELLITE SYSTEM	X		8
REMOTE DATA CAPTURE (MINIS)	X		5
CENTRAL INFORMATION FILE (CIF)		X	8
POINT OF SALE (POS)		X	3
DIRECT DEPOSIT CORPORATE PAYROLLS	X		2
DEMAND DEPOSIT ACCOUNTING		X	5
NOW ACCOUNTS		X	2
PAY-BY-PHONE		X	3

EXHIBIT VI-5

RESPONDENTS' PLANS FOR IMPLEMENTING NEW
CORRESPONDENT BANK APPLICATIONS

APPLICATION	NUMBER OF RESPONDENTS PLANNING TO IMPLEMENT
CERTIFICATE OF DEPOSIT	3
COMMERCIAL LOANS	8
FIXED ASSETS	2
REAL ESTATE MANAGEMENT	5
GENERAL LEDGER	9
CENTRAL INFORMATION FILE	8
NOW ACCOUNTING	2
PAY-BY-PHONE	1
IRA/KEOGH ACCOUNTS	3
POINT OF SALE (POS)	1

3. FACILITIES MANAGEMENT (FM)

- Two respondents were already on FM contracts for correspondent banking. Facilities management arrangements had been considered and rejected by another 35% of the respondents. Those banks which had not considered it (58%) were mostly too small to do so directly. Three small banks were being processed by FM centers, through contracts arranged by larger banks.
- Typical respondents' comments on reasons for FM rejection and conditions under which they would consider FM are shown in Exhibit VI-6.

4. OTHER DEVELOPMENTS

- The four areas that respondents felt might increase their use of correspondent bank processing services are shown in Exhibit VI-7.

C. PURCHASING CONSIDERATIONS

I. PROCESSING PRICING

- The major portion (79%) of respondents using correspondent bank services pay for processing through transaction pricing. Only 8% of the respondents were closely tied to a large bank for correspondent services through compensating balances (see Exhibit VI-8).
- Users feel that the pricing methods for services are overly complex. Processing costs vary widely from month to month making budgeting difficult. Respondents spend a great deal of time auditing vendor bills. One user was particularly pleased with the vendor billing method whereby the total charge starts with a base minimum and is transaction priced to a maximum negotiated ceiling. Typical correspondent price schedules are shown in Exhibit VI-9.

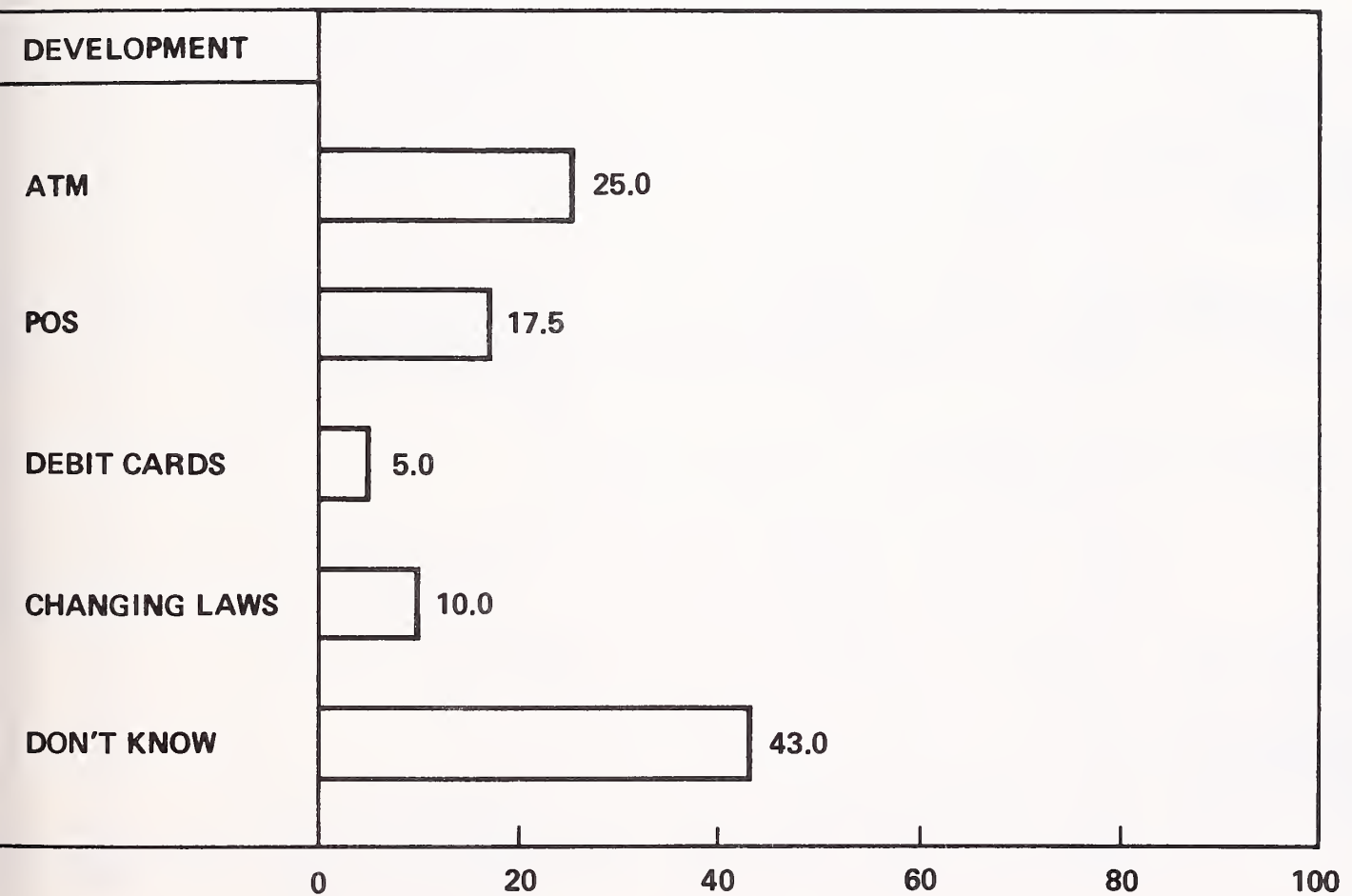
EXHIBIT VI-6

RESPONDENTS' ATTITUDES TOWARD FACILITIES MANAGEMENT FOR CORRESPONDENT BANK PROCESSING

- "We were on it but went in-house - costs were too high."
- "Would consider it in future depending on costs and quality of service."
- "Would consider it if we could share costs with other banks."
- "Would not consider it - management wants to retain the image of an independent bank."
- "We have a very stable EDP staff so we don't need to consider FM."
- "Would if our DP manager left."
- "Would look into it if the bank formed a holding company."

EXHIBIT VI-7

**RESPONDENTS' OPINIONS ON OTHER DEVELOPMENTS
INFLUENCING THE GROWTH OF CORRESPONDENT BANK PROCESSING SERVICES**



**PROPORTION OF RESPONDENTS (%) FEELING THE DEVELOPMENT WILL INFLUENCE THE
GROWTH OF CORRESPONDENT BANK PROCESSING SERVICES**

EXHIBIT VI-8

HOW RESPONDENTS PAY FOR CORRESPONDENT BANK PROCESSING SERVICES

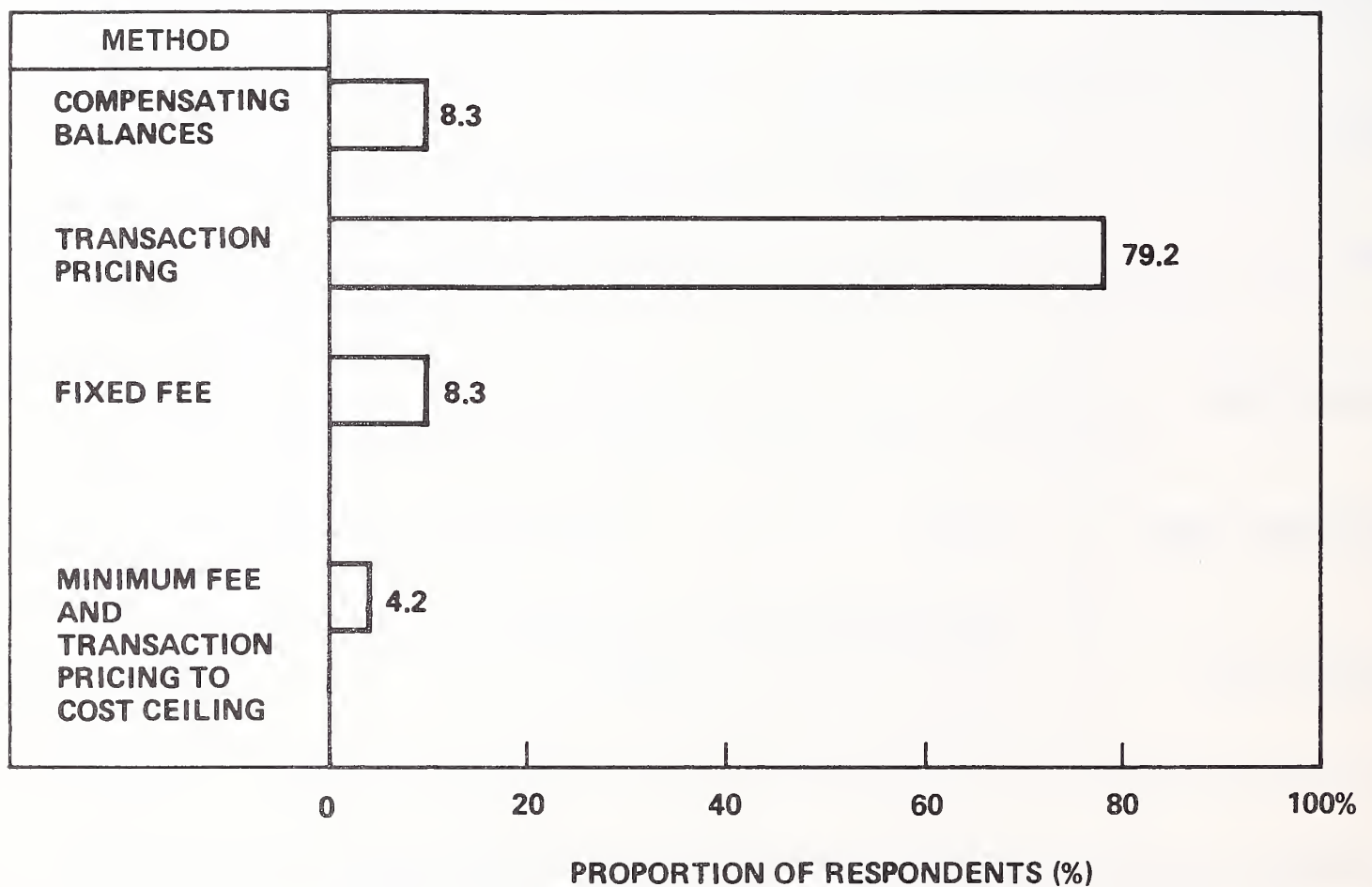


EXHIBIT VI-9

TYPICAL CORRESPONDENT BANK PROCESSING PRICE SCHEDULES

APPLICATION	BILLING METHOD	CORRESPONDENT BANK PROCESSING VENDORS (\$ DOLLARS)				
		1	2	3	4	5
DEMAND DEPOSIT ACCOUNTING	FILE CREATION ITEM PROCESSING ACCOUNT/MONTH ON-LINE MEMO POSTING/ INQUIRY/ACCOUNT/MONTH MONTHLY MINIMUM	0.500 0.025 300	0.50 0.32 (1)	0.012 0.100	0.0163 0.2300	0.3500 0.0138 0.1000 0.020 300
SAVINGS	FILE CREATION ACCOUNT/DAILY/TRANSACTION ACCOUNT/MONTH ACCOUNT/QUARTER ON-LINE POSTING AND INQUIRY/ACCOUNT/MONTH MONTHLY MINIMUM	0.40 0.11 0.11 0.0925 100	0.50 0.08 (1)	0.05 0.25	0.05 0.06	0.09 0.02 100
INSTALLMENT LOAN	FILE CREATION ACCOUNT/MONTH DAILY PROCESSING ACCOUNT BOOKS MONTHLY MINIMUM	0.25 0.25 0.75 150	0.50 0.18 (1)	0.175 0.350	1.00 0.26 0.58	0.35 0.20 0.40 50
CERTIFICATE OF DEPOSIT	FILE CREATION ACCOUNT/MONTH NEW ACCOUNTS CHECK ISSUE MONTHLY MINIMUM	0.40 0.08 0.25 0.08 250	0.50 0.10 0.50 (1)	0.03		0.35 0.09 0.35 0.05
MORTGAGE LOAN	FILE CREATION ACCOUNT/MONTH ACCOUNT/MONTH/DAILY NEW ACCOUNTS MONTHLY MINIMUM	1.00 0.45 0.90 100	0.50 0.25 0.50 (1)	0.18 0.34	0.26	0.350 0.265 0.350 100
CLUB ACCOUNTS	FILE CREATION RENEWED ACCOUNTS ACCOUNT/YEAR CHECK ISSUE/CHECK MINIMUM MONTHLY	0.150 0.075 0.830 50	0.50 0.36 (1)	0.76	0.840 0.065	0.60 0.05

EXHIBIT VI-9 (CONTD)

TYPICAL CORRESPONDENT BANK PROCESSING PRICE SCHEDULES

APPLICATION	BILLING METHOD	CORRESPONDENT BANK PROCESSING VENDORS (\$ DOLLARS)				
		1	2	3	4	5
COMMERCIAL LOAN	FILE CREATION		0.50			0.35
	ACCOUNT/MONTH		0.25			0.60
	NEW ACCOUNTS		0.50			0.35
	MONTHLY MINIMUM		(1)			200
GENERAL LEDGER	FILE CREATION/ACCOUNT		0.50			100
	FILE CREATION/BANK					
	BRANCH CHARGE/MONTH		100			40
	INITIAL BRANCHES					
	BRANCH CHARGE/MONTH		50			40
	ADDITIONAL BRANCHES					
	ITEM PROCESSING				.023	
	MONTHLY MINIMUM		300			
REVOLVING CREDIT	FILE CREATION	0.50				
	ACCOUNT/MONTH—	0.50				
	INITIAL ACCOUNTS			0.29	0.29	
	ACCOUNT/MONTH	0.35		—		
	ADDITIONAL ACCOUNTS					
	MONTHLY MINIMUM	250	(2)			

(1) MINIMUM MONTHLY \$500 FOR ANY COMBINATION OF SERVICES

(2) 30% SURCHARGE ON MONTHLY FEES FOR HANDLING INPUT AND
PRODUCING FORMS AND REPORTS

2. SOFTWARE PRICING

- Respondents made little differentiation between lease and purchase of software during the interview process. Most respondents pay a one-time fee for the purchase of the rights to use the specialty applications package at their installation(s). Respondents frequently pay an additional amount to have the application modified to meet their particular requirements. Respondents want application packages which the vendors will maintain and update on an annual basis. Typical expenditures by respondents on software and software maintenance (professional services) by bank size are shown in Exhibit VI-10.

D. VENDOR SELECTION

- The banks officer responsible for correspondent banking processing services selection differs according to bank size. There is some variation even within size categories as can be seen in Exhibit VI-11.
- The vice-president and cashier is the person most frequently involved in vendor selection in small banks.
- For multi-bank holding companies vendor selection is usually made by the financial vice-president of the holding company.
- As shown in Exhibit VI-12, respondents chose service vendors for a wide variety of reasons. Price was rarely a consideration when respondents changed services vendors. Dissatisfaction with vendor performance with respect to responding to day-to-day problems was frequently quoted. Other respondents changed vendors when the vendor servicing them went out of business, or when the bank became a member of a multi-bank holding company.

EXHIBIT VI-10

TYPICAL RESPONDENTS' ANNUAL EXPENDITURES FOR
CORRESPONDENT BANKING SOFTWARE PRODUCTS AND FOR
PROFESSIONAL SERVICES FOR CORRESPONDENT BANK APPLICATIONS

BANK SIZE	ANNUAL EXPENDITURES PER BANK (\$ THOUSAND)	
	SOFTWARE PRODUCT	PROGRAMMING AND SOFTWARE MAINTENANCE
SMALL	\$ 11.2	\$ 3.8
MEDIUM	21.6	14.4
LARGE	54.0	36.0
VERY LARGE	\$216.0	\$ 144.0

EXHIBIT VI-11

BANK OFFICER RESPONSIBLE FOR SELECTING CORRESPONDENT BANK PROCESSING SERVICES VENDOR

RESPONSIBLE BANK OFFICER	SMALL		MEDIUM DEPOSITS >\$100≤500M	LARGE DEPOSITS >\$500≤1B	VERY LARGE DEPOSITS >\$1B
	DEPOSITS <\$10M	DEPOSITS >\$10≤100M			
COMPTROLLER	X	X	X	-	-
MANAGEMENT COMMITTEE	XX	X	X	-	-
PRESIDENT WITH BOARD CONCURRENCE	-	-	-	XXX	XXX
VICE PRESIDENT AND CASHIER	XX	XXX	XX	X	X
PRESIDENT	X	X	XX	X	X
FINANCIAL V.P. OF HOLDING COMPANY	-	-	XXX	XXX	XXX

KEY

- NOT APPLICABLE
X LESS THAN 25%
XX BETWEEN 25% AND 75%
XXX OVER 75%

EXHIBIT VI-12

RESPONDENTS' REASONS FOR VENDOR SELECTION

REASONS	NUMBER OF RESPONDENTS
"REFERRAL BY ANOTHER BANK"	3
"CORRESPONDENT RELATIONSHIP"	2
"AUDITORS LIKED REPORTS"	1
"GOT PROOFING WITH SERVICES"	2
"CONDUCTED SURVEY, SELECTED BEST"	3
"BEST PRICE"	3
"ONLY GOOD SERVICE IN AREA"	2
"MEETS NEEDS FOR NOW"	1
"BANK JOINED HOLDING COMPANY"	2
"PRODUCT AWARENESS"	1
"DON'T KNOW"	3
"COMPETITIVE BID FOR FM"	1
TOTAL	24

- Only 29% of the respondents using correspondent banking services were highly pleased with the level of vendor service (see Exhibit VI-13). Those respondents whose level of satisfaction was low (14%) were forced to use the existing vendor services because it was the only one available in their area, or because the bank was a member of a multi-bank holding company.
- The size and stature of the commercial bank processing vendor was very important to 47% of the respondents. Quality and service cost were more important than size and reputation to 29% of the respondents.
- Respondents had knowledge of only the leading correspondent banking services vendors in their region. This situation will change as processing vendors extend their services well beyond their regional area (100-200 miles) through satellite and distributed processing systems. Leading vendors mentioned by more than one respondent are shown in Exhibit VI-14.

EXHIBIT VI-13

**RESPONDENT LEVEL OF SATISFACTION WITH
CORRESPONDENT BANK PROCESSING VENDORS**

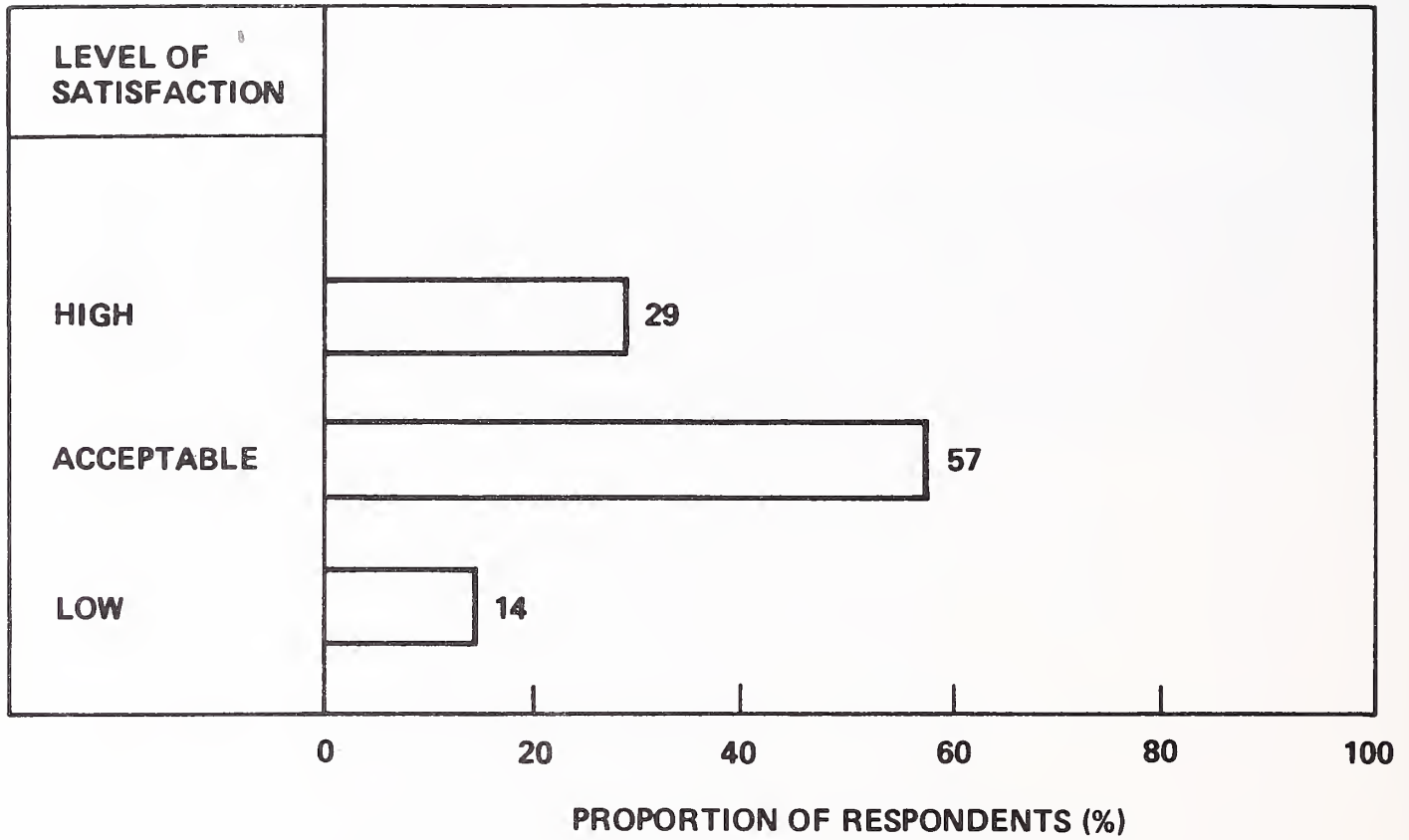


EXHIBIT VI-14

LEADING CORRESPONDENT BANK PROCESSING VENDORS
MENTIONED BY MULTIPLE RESPONDENTS

BANKS	SERVICES COMPANIES	FACILITY MANAGERS
PEOPLES NATIONAL BANK	ASSOC. COMPUTER SERVICES	NATIONAL SHAREDATA
NORTH WEST BANCORP	BOEING COMPUTER SERVICES	SYSTEMATICS
SECURITY NATIONAL BANK	COLORADO COMPUTER SERVICES	COMPUTER SCIENCES
CITY NATIONAL BANK	DECIMUS	
FIRST WISC. NAT'L BANK	ADP BANKING SERVICES	ELECTRONIC DATA SYSTEMS
FIRST NATIONAL BANK, ATLANTA	COMPUTER DIMENSIONS	
WACHOVIA BANK	SOUTHEAST DATA CORP.	
CITIZENS & SOUTHERN	ITEL	
NORTH CAROLINA NATIONAL BANK	METRIDATA	
STATE STREET BANK, BOSTON		
FIRST NATIONAL BANK, BOSTON		
MELLON BANK		
CONTINENTAL BANK, CHICAGO		
HARRIS BANK, CHICAGO		

VII COMPETITIVE ENVIRONMENT

VII COMPETITIVE ENVIRONMENT

- Four types of vendors compete in the correspondent bank computer services marketplace:
 - Banks offering correspondent bank processing services.
 - Computer processing services vendors.
 - Facilities managers (FM).
 - Software and professional services vendors.

There is some overlap among vendors regarding types of services offered, as some vendors are active in more than one of the above categories.

- The market is characterized by a large number of specialized vendors with no one vendor dominating the marketplace. However, commercial banks as a group are the leading providers of processing services. Competition among current vendors is strong, but as stated earlier, opportunities for market entry still exist due to changes in market structure influenced by both electronic technology and legislation.
- Most of the over 200 bank and commercial computer services vendors operate locally within a radius of 200 miles. Some are operating on a regional (1,500 mile radius) and a few on a national basis. The total number of vendors is expected to decrease as more vendors extend area coverage through satellite systems and on-site minicomputers.

A. DETERMINATION OF MARKET SHARE

- Using a combination of industry data, existing INPUT data, together with new information from interviews on bank managers' future intentions, the distribution of in-house EDP versus outside computer services by bank size was determined. The data is presented in Exhibit VII-1. Examples are:
 - Nearly 60% of all small banks with assets between \$10-100 million use outside services.
 - Facilities managers service nearly 10% of all medium sized banks.
- The distribution of processing services revenues by vendor type was determined by using the data for the number of banks and total bank deposits developed in Chapter III, Industry Structure (Exhibits III-1 and III-2). The distribution of software and professional services revenues was developed by using the respondent data presented in Chapter VI, Computer Services Market (Exhibit VI-10). The determination of vendor market share is shown in Exhibit VII-2.
- Commercial banks are the leading providers of processing services to their correspondents. With 1977 revenues of \$310 million, banks have captured 48% of the total services market. Although for some banks the profitability of this business is marginal (and potentially obtainable by computer services vendors), the very large banks are committed to the market and are expanding service offerings.
- The correspondent bank processing portion (\$130 million) of facilities management revenues represents 20% of the total market.
- Computer services firms engaged in correspondent bank processing currently have only 12% of the total market. No one vendor has revenues in excess of \$10 million from correspondent bank processing. Opportunities exist for

EXHIBIT VII-1

DISTRIBUTION OF IN-HOUSE EDP VERSUS OUTSIDE COMPUTER SERVICES
ACCORDING TO BANK DEPOSIT SIZE
(1976)

TYPE OF SERVICE	BANK DEPOSIT SIZE	SMALL		MEDIUM >\$100≤\$500M	LARGE >\$500M≤1B	VERY LARGE >\$1B
		DEPOSITS <\$10M	DEPOSITS >\$10≤100M			
IN-HOUSE EDP • HOLDING CO. • IN-HOUSE • JOINT VENTURE SUBTOTAL		3.8%	14.8%	12.4%	12.5%	21.9%
		2.9	16.4	61.1	79.7	73.4
		2.1	5.9	5.7	0	0
		8.8%	37.1%	79.2%	92.2%	95.3%
OUTSIDE SERVICES • CORRESPONDENT BANK • FACILITIES MANAGEMENT • NON-BANK SERVICES VENDOR SUBTOTAL		42.4	42.8	6.7	1.5	1.6
		6.3	6.3	9.7	6.3	3.1
		5.9	10.4	3.4	0	0
		54.6%	59.5%	19.8%	7.8%	4.7%
NOT AUTOMATED		36.6	3.4	1.0	0	0
TOTAL		100.0%	100.0%	100.0%	100.0%	100.0%

EXHIBIT VII-2

DETERMINATION OF MARKET SHARE FOR CORRESPONDENT
BANK COMPUTER SERVICES BY BANK SIZE
(1977)

COMPUTER SERVICES VENDOR TYPE		BANK SIZE		CORRESPONDENT BANK SERVICES REVENUES (\$MILLION)					TOTAL	% OF TOTAL
				SMALL		MEDIUM \$100≤\$500M \$500≤\$1BIL	LARGE \$500≤\$1BIL	VERY LARGE \$1 BIL		
				<\$10M	>\$10≤100M					
COMMERCIAL BANKS				12.4	247.7	23.8	2.9	23.3	310.1	48.4 %
COMPUTER PROCESSING VENDORS				1.7	60.2	12.1	0	0	74.0	11.6
FACILITIES MANAGEMENT VENDORS				1.8	36.5	34.5	12.2	45.2	130.2	20.3
SOFTWARE PRODUCTS VENDORS				1.9	40.7	13.7	5.8	22.3	84.4	13.2
PROFESSIONAL SERVICES VENDORS				.6	13.5	9.1	3.6	14.8	41.6	6.5
TOTAL				18.4	398.6	93.2	24.5	105.6	640.3	100.0%

computer services vendors to enter and expand their market coverage, capturing a portion of both external processing by commercial banks and in-house processing within multi-bank holding companies.

B. COMMERCIAL BANKS ENGAGED IN CORRESPONDENT BANK PROCESSING

- Nearly 64% of respondent banks reported they were profitable in offering correspondent bank processing services. The reason banks offer correspondent bank processing services are shown in Exhibit VII-3. The data suggests that there are a significant number of commercial banks (25%) that would just as soon have correspondent bank processing accomplished by a specialized computer services vendor.
- Over 60% of the respondent commercial banks report that little or no customizing is done for correspondent bank processing. This suggests a potential for standardized application packages at least at the regional level (see Exhibit VII-4).
- Significant data concerning major commercial banks offering correspondent bank processing is shown in Exhibit VII-5.

C. CORRESPONDENT BANK PROCESSING SERVICES VENDORS

- Leading computer services companies providing correspondent bank processing services are shown in Exhibit VII-6.
- Colorado Computer Center provides correspondent bank services to small and medium sized firms in the greater Denver area. The company is privately owned, has about 100 employees, and derives its revenues (\$3 million) solely from the banking industry.

EXHIBIT VII-3

RESPONDENT COMMERCIAL BANK EXECUTIVES' REASONS FOR OFFERING CORRESPONDENT BANK PROCESSING SERVICES

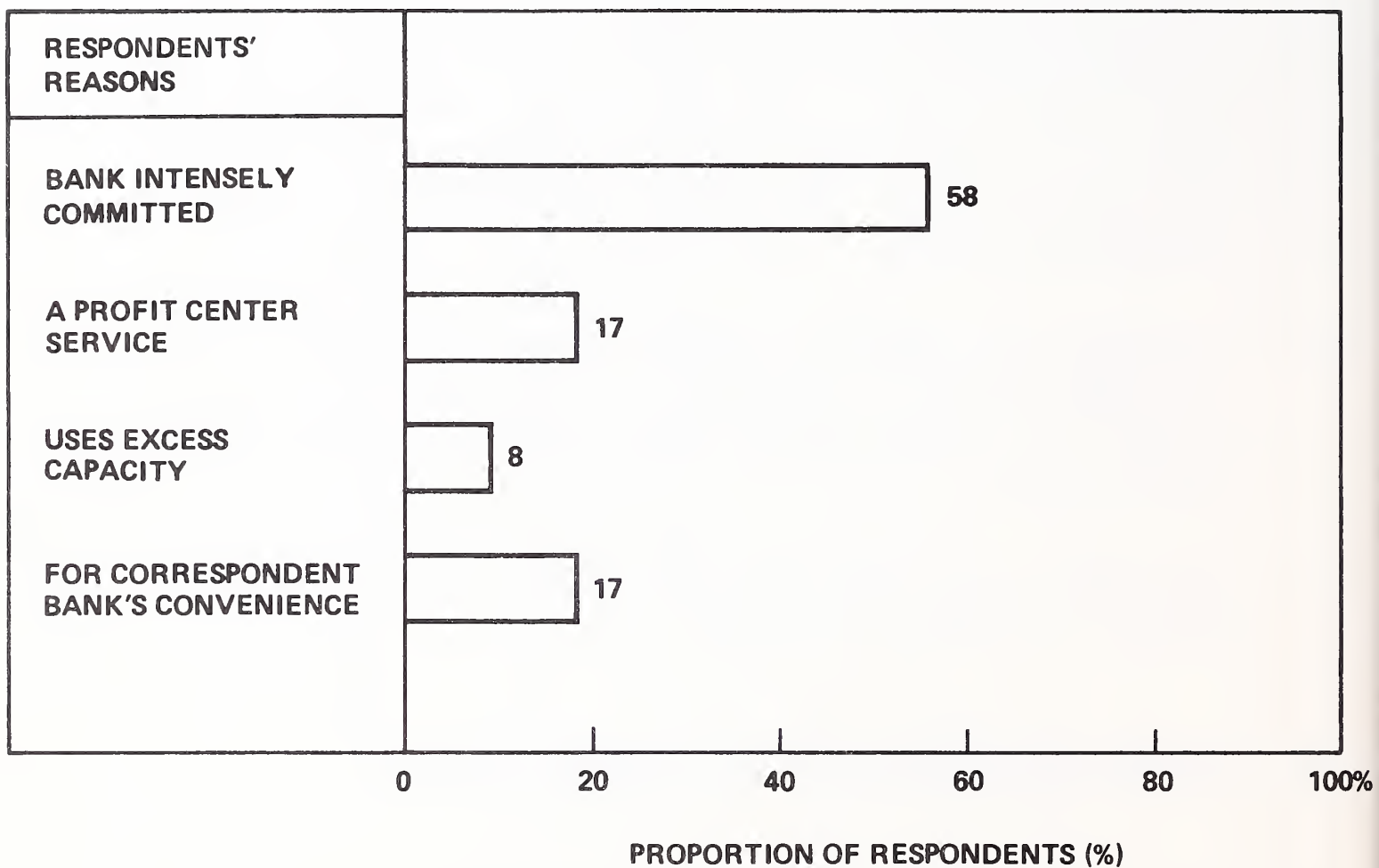


EXHIBIT VII-4

**DEGREE THAT RESPONDENT COMMERCIAL BANKS CUSTOMIZE
PROCESSING SYSTEMS FOR THEIR CORRESPONDENTS**

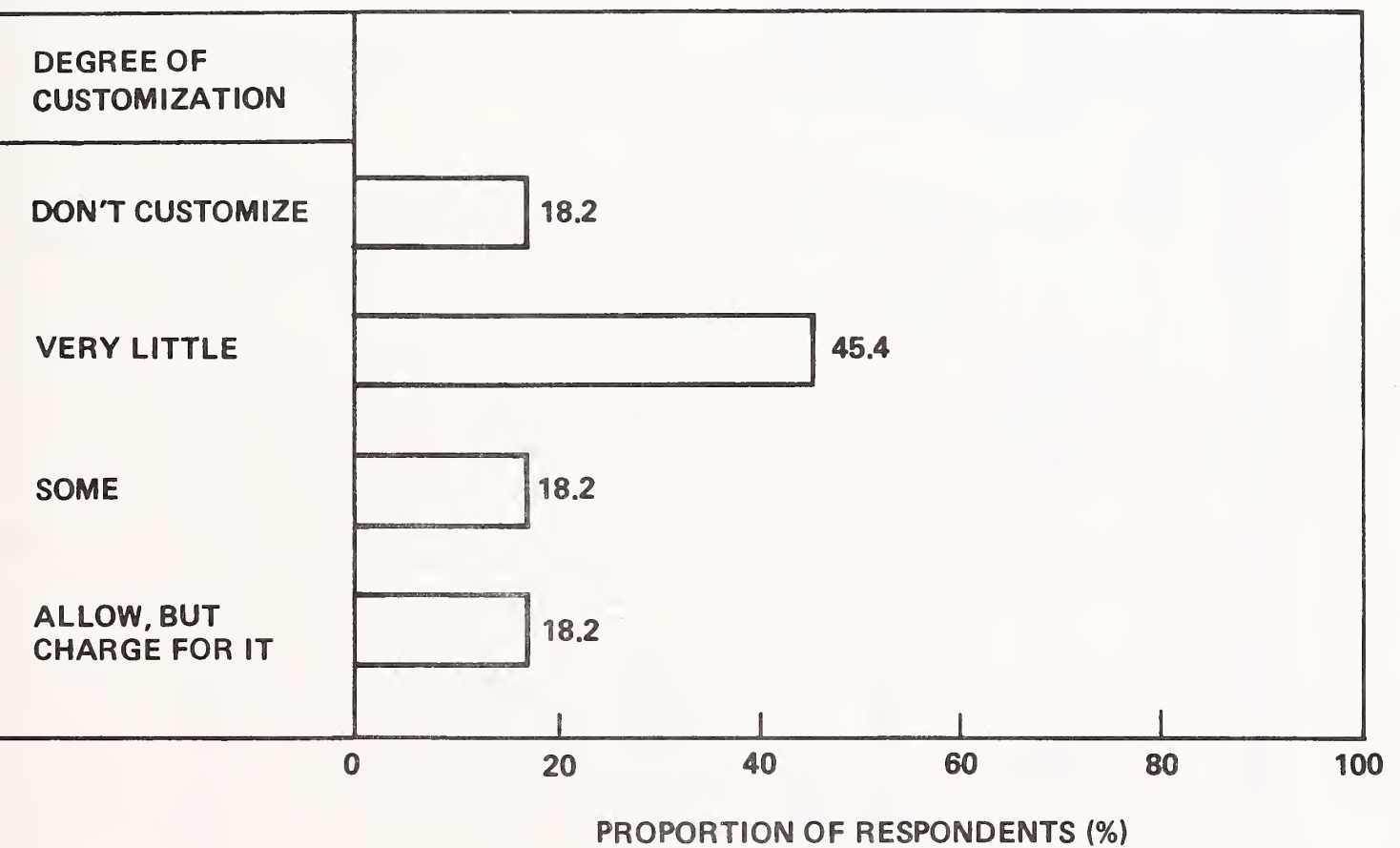


EXHIBIT VII-5

RESPONDENT COMMERCIAL BANKS OFFERING CORRESPONDENT BANK PROCESSING

COMMERCIAL BANK*	SIZE OF BANK	AREA SERVICED (RADIUS IN MILES)	NO. OF BANKS SERVICED	ESTIMATED CORRESPONDENT BANK REVENUES 1977 (\$ MILLION)
1	VERY LARGE	400	157	\$4.5
2	VERY LARGE	1500	200	7.5
3	LARGE	200	40	1.2
4	VERY LARGE	500	175	6.5
5	LARGE	150	35	1.2
6	VERY LARGE	150	45	2.6
7	LARGE	110	40	0.9
8	MEDIUM	150	25	\$0.5

* INPUT INTERVIEWED EACH, AND COMMITTED TO MAINTAIN THEIR IDENTITY CONFIDENTIAL.

EXHIBIT VII-6**COMPUTER SERVICES COMPANIES PROVIDING CORRESPONDENT
BANK PROCESSING SERVICES**

COMPUTER SERVICES VENDOR	NO. OF BANKS SERVICED	ESTIMATED 1977 CORRESPONDENT BANKING RELATED REVENUES (\$ MILLION)
ADP NETWORK SERVICES, BANKING SERVICES	125–200	\$4.0–6.5
DECIMUS	n.a.	n.a.
COLORADO COMPUTER CENTER, INC.	50–75	2.5–3.0
METRIDATA COMPUTER INC.	35–60	2.0–2.5
ITEL DATA SERVICES GROUP, INC.	80–125	\$3.5–5.0

n.a. — not available

- ADP Network Services, Banking Services - Has the largest current position both in terms of banks serviced and estimated 1977 revenues from correspondent banking.
- Itel Data Services Group, subsidiary of Itel Inc., offers batch and on-line computer services to over 11,000 clients in a variety of industries including banking and financial. The group is highly acquisition-oriented. Over 14% of its revenues are currently for financial services including correspondent bank processing.

D. FACILITIES MANAGEMENT (FM) COMPANIES IN CORRESPONDENT BANKING

- Exhibit VII-7 identifies the vendors of approximately 80% of current FM revenues.
- Financial Industry Systems is a joint venture between Hartford Financial Systems, Inc. (bank subsidiary) and Martin Marietta Corporation. The company provides FM services, payment systems services and software. More than 85% of 1977 revenues (\$18 million) are for FM.
- Metridata Computing Inc. (MCI) offers FM, remote computing services, and software packages. MCI operates exclusively in the North Central region. Sixty percent of MCI's business is in banking. FM represents 45% of 1977 revenues (\$8.8 million).
- Systematics specializes in FM to commercial banks. Services are provided to over 100 banks from 26 data centers throughout the U.S. The company is privately owned, has over 700 employees and is growing at an AAGR of over 40%.

EXHIBIT VII-7

FACILITIES MANAGEMENT VENDORS INVOLVED IN CORRESPONDENT BANK PROCESSING

FACILITIES MANAGEMENT VENDORS	INSTALLATIONS	ESTIMATED 1977 CORRESPONDENT BANKING RELATED REVENUES (\$ MILLION)
SYSTEMATICS INC	20-30	\$14-16
NATIONAL SHAREDATA	30-40	25-30
ELECTRONIC DATA SYSTEMS	15-20	25-30
DECIMUS	n.a.	n.a.
METRIDATA	4-10	2.0-2.7
COMPUTER SCIENCES CORP.	1	2.0-2.5
WEILAND COMPUTER GROUP INC.	2	2.0-2.5
FINANCIAL INDUSTRY SYSTEMS	9-12	\$12-15

n.a. — not available

- National Sharedata, a subsidiary of Western Union, specializes in FM. Ninety-five percent of its 1977 revenues (\$34 million) come from services provided to commercial banks, currently numbering over 450. FM installations are primarily in the North Central and Midwest regions.

E. COMPUTER SOFTWARE VENDORS OFFERING CORRESPONDENT BANKING APPLICATION PACKAGES

- Leading software vendors for correspondent banking are shown in Exhibit VII-8.
- The banking division of University Computing Company (UCC) was established by acquisition of Results, Inc. The division successfully markets banking software packages for correspondent banking applications for IBM System 360/370 installations. Estimated 1977 revenues are \$14 million.
- Weiland Computer Group, Inc. offers both FM and software products. Less than 50% of 1977 revenues (\$5.8 million) come from FM contracts with 30 banks. The software products are oriented to IBM 360/370 systems, and span the processing modes from batch to on-line CIF.
- Bay Banks Data Services, Inc. (BDSI) is a multi-bank holding company subsidiary offering both processing and software packages for correspondent banking and S&Ls. BDSI markets its consolidated statement accounting and installment loan software systems for IBM System 370 systems to operate in a remote batch or batch mode. Other packages are marketed for both IBM 360/370 systems in batch mode. Only 5% of 1977 revenues (\$5 million) come from software products.
- Tymshare markets a full line of 17 software packages for correspondent bank processing on Burroughs equipment. In addition to selling to in-house users, the software is used in over 30 data centers serving over 450 banks. Estimated 1977 revenues for software products was over \$2 million.

SOFTWARE VENDORS FOR CORRESPONDENT BANK APPLICATIONS

APPLICATION SOFTWARE VENDORS	TYPE OF MAINFRAME									
	DEMAND DEPOSIT ACCOUNTING	PASSBOOK SAVINGS	CERTIFICATE OF DEPOSIT	REVOLVING CREDIT	PERSONAL LOAN	COMMERCIAL LOAN	GENERAL LEDGER	INQUIRY /CIF	ACCOUNT RECONCILI- ATION	PROOF OF DEPOSIT
UNIVERSITY COMPUTING BANKING DIVISION					IBM	IBM	IBM BUR	IBM		IBM
BOB WHITE COMPUTING & SOFTWARE CO.	IBM	IBM	IBM		IBM		IBM BUR	IBM	IBM BUR	IBM
FIRST WISCONSIN NATIONAL BANK	IBM		IBM		IBM					
WEILAND COMPUTER GROUP INC.	IBM	IBM	IBM		IBM			IBM		
TYMSHARE	BUR	BUR	BUR	BUR	BUR	BUR	BUR		BUR	BUR
FLORIDA SOFTWARE SYSTEMS INC.	IBM BUR	IBM BUR	IBM BUR	IBM BUR	IBM BUR	IBM BUR				
GENERAL COMPUTER SERVICES	IBM	IBM	IBM	IBM	IBM	IBM HON		IBM		IBM
KRANZLEY & CO.				IBM	IBM	IBM				
BAY BANKS DATA SERVICES	IBM	IBM			IBM				IBM	IBM
PAYMENT SYSTEMS INC.	BUR	BUR			BUR	BUR				
MANAGEMENT SCIENCES OF AMERICA INC.							IBM HON BUR			

IBM — INTERNATIONAL BUSINESS MACHINES 360/370 SERIES
 BUR — BURROUGHS B500/B2000—4000 SERIES
 HON — HONEYWELL 2000—6000 SERIES

- Florida Software Services has installed software packages for correspondent bank functions in over one thousand banks using both Burroughs and IBM equipment. The company markets automated data processing packages for commercial banks. Total 1977 revenues are estimated at \$7 million, over half of which is software products.

APPENDIX A: DATA BASE

EXHIBIT A-1

FORECAST OF USER EXPENDITURES FOR COMPUTER SERVICES FOR DEMAND
DEPOSITS, SAVINGS, LOANS AND RELATED FUNCTIONS
(1977 - 1982)

INDUSTRY NAME BANKING
SIC GROUP 60
SICs INCLUDED 6022-6027
SICs EXCLUDED 6011, 6028-6042

MODE OF SERVICE	EXPENDITURES (\$ MILLIONS)					AVERAGE ANNUAL GROWTH RATE (%)
	1977	1978	GROWTH RATE (%)	1980	1982	
REMOTE COMPUTING						
INTERACTIVE	\$ 46	\$ 60	30%	\$101	\$ 174	30%
REMOTE BATCH	42	58	37	110	206	37
DATA BASE	0	0	0	0	0	0
FACILITIES MANAGEMENT	130	152	17	209	283	17
BATCH SERVICES	296	317	7	355	422	7
TOTAL PROCESSING SERVICES	\$514	\$587	16%	\$786	\$1,085	16%
SOFTWARE PRODUCTS	85	97	14	126	166	14
PROFESSIONAL SERVICES	42	48	15	64	83	15
SUB-TOTAL	127	145	15	190	249	15
TOTAL	\$641	\$732	16%	\$976	\$1,334	16%

EXHIBIT A-2

FORECAST OF USER EXPENDITURES FOR COMPUTER SERVICES FOR DEMAND DEPOSITS, SAVINGS, LOANS, AND RELATED FUNCTIONS (1977/1982)

INDUSTRY NAME:	BANKING
SIC GROUP	60
SICs INCLUDED	6022-6027
SICs EXCLUDED	6011, 6028-6042

TYPE OF APPLICATION AREA	EXPENDITURES (\$ MILLION)		AVERAGE ANNUAL GROWTH RATE (%)
	1977	1982	
GENERAL BUSINESS	\$ 0	\$ 0	0%
SCIENTIFIC AND ENGINEERING	0	0	0
INDUSTRY SPECIALTY— CORRESPONDENT BANKING	641	1,335	16
UTILITY	0	0	0
TOTAL	\$641	\$1,335	16%

EXHIBIT A-3

DISTRIBUTION OF USER EXPENDITURES FOR PROCESSING SERVICES FOR DEMAND DEPOSITS, SAVINGS, LOANS AND RELATED FUNCTIONS (1977)

INDUSTRY NAME	BANKING
SIC GROUP	60
SICs INCLUDED	6022-6027
SICs EXCLUDED	6028-6042

TYPE OF SERVICE	MODE OF SERVICE (EXPENDITURES: \$ MILLION)					TOTAL (\$M)
	INTER- ACTIVE	REMOTE BATCH	DATA BASE	FM	BATCH	
GENERAL BUSINESS	\$ 0	\$ 0	\$0	\$ 0	\$ 0	\$ 0
SCIENTIFIC & ENGINEERING	0	0	0	0	0	0
SPECIALITY	46	42	0	130	296	514
UTILITY	0	0	0	0	0	0
TOTAL	\$46	\$42	\$0	\$130	\$296	\$514

EXHIBIT A-4

DISTRIBUTION OF USER EXPENDITURES FOR PROCESSING SERVICES FOR DEMAND DEPOSITS, SAVINGS, LOANS AND RELATED FUNCTIONS (1982)

INDUSTRY NAME BANKING
SIC GROUP 60
SICs INCLUDED 6022-6027
SICs EXCLUDED 6011, 6028-6042

TYPE OF SERVICE	MODE OF SERVICE (EXPENDITURES \$ MILLION)					TOTAL (\$M)
	INTER- ACTIVE	REMOTE BATCH	DATA BASE	FM	BATCH	
GENERAL BUSINESS	\$ 0	\$ 0	\$0	\$ 0	\$ 0	\$ 0
SCIENTIFIC AND ENGINEERING	0	0	0	0	0	0
SPECIALITY	174	206	0	283	422	1,085
UTILITY	0	0	0	0	0	0
TOTAL	\$174	\$206	\$0	\$283	\$422	\$1,085

EXHIBIT A-5

FORECAST OF USER EXPENDITURES FOR COMPUTER SERVICES FOR DEMAND DEPOSITS, SAVINGS, LOANS, AND RELATED FUNCTIONS BY SIZE OF USER⁽¹⁾ GROUP 1977

INDUSTRY NAME BANKING
SIC GROUP 60
SICs INCLUDED 6022-6027
SICs EXCLUDED 6011, 6028-6042

SIZE OF USER	EXPENDITURES		AVERAGE ANNUAL GROWTH RATE
	(\$ MILLIONS)	(% OF TOTAL)	
VERY LARGE	\$106	16.5%	19%
LARGE	25	3.9	13
MEDIUM	93	14.5	14
SMALL	417	65.1	16
TOTAL	\$641	100.0%	16%

(1) User size definitions given in Appendix B.

EXHIBIT A-6

INTERVIEW PROGRAM FOR COMPUTER SERVICES MARKETS IN CORRESPONDENT BANKING OIC

	PHONE	ON SITE	TOTAL
A BANKS			
• USERS OF CORRESPONDENT DATA PROCESSING SERVICES	<u>22</u>	<u>2</u>	<u>24</u>
• OFFERERS OF CORRESPONDENT DATA PROCESSING SERVICES	<u>8</u>	<u>8</u>	<u>16</u>
SUBTOTAL	<u>30</u>	<u>10</u>	<u>40</u>
B VENDORS	<u>8</u>		<u>8</u>
C ASSOCIATIONS			
• AMERICAN BANKERS ASSOCIATION	<u>1</u>		<u>1</u>
• NATIONAL ASSOCIATION OF BANK SERVICES	<u>1</u>		<u>1</u>
D PUBLICATIONS			
• 1975 NATIONAL OPERATIONS & AUTOMATION SURVEY – AMERICAN BANKERS ASSOCIATION			
• 1977 AMERICAN BANK DIRECTORY – McFADDEN BUSINESS PUBLICATIONS			
• 1977 POLKS' WORLD BANK DIRECTORY			
• 1976 FUNCTIONAL COST ANALYSIS – FEDERAL RESERVE			
• 1976 ANNUAL REPORT OF THE FEDERAL DEPOSIT INSURANCE CORPORATION	<u>10</u>	<u>0</u>	<u>10</u>
TOTAL INTERVIEWS	<u>40</u>	<u>10</u>	<u>50</u>

APPENDIX B: DEFINITIONS

APPENDIX B: DEFINITIONS

● COMPUTER SERVICES

These are services provided by vendors which perform data processing functions using vendor computers, or assist users to perform such functions on their own computers.

The following are definitions of the modes of service used in this report:

● REMOTE COMPUTING SERVICES (RCS)

Provision of data processing to a user by means of terminals at the user's site/s connected by a data communications network to the vendor's central computer. The three sub-modes of RCS are:

1. INTERACTIVE (timesharing) is characterized by interaction of the user with the system, primarily for problem solving timesharing, but also for data entry and transaction processing; the user is "on-line" to the program/files.
2. REMOTE BATCH is where the user hands over control of a job to the vendor's computer which schedules job execution according to priorities and resource requirements.
3. DATA BASE is characterized by the retrieval of information from a vendor-maintained data base. This may be owned by the vendor or a third party.

- **BATCH SERVICES**

This includes data processing performed at vendors' sites of user programs and/or data which are physically transported (as opposed to electronically by telecommunications media) to and/or from those sites. Data entry and data output services, such as keypunching and COM processing, are also included. Batch services include those expenditures by users which take their data to a vendor site which has a terminal connected to a remote computer used for the actual processing.

- **FACILITIES MANAGEMENT (FM)**

(Also referred to as "Resource Management" or "Systems Management".) The management of all or part of a user's data processing functions under a long-term contract (not less than one year). To qualify as FM, the contractor must directly plan and control as well as operate the facility provided to the user on-site, through communications lines, or in mixed mode. Simply providing resources, even though under a long-term contract and/or for all of a users' processing needs, does not necessarily qualify as FM.

- **PROFESSIONAL SERVICES**

Management consulting related to EDP, systems consulting, systems design and programming, and other professional services are included in this category. Services can be provided on a basis of: "Time and Materials," whereby the user pays for the time used of an individual on a daily or other fixed rate, or "Fixed Price," where the user pays a fixed fee for a specific task or series of tasks.

- **SOFTWARE PRODUCTS**

This category is for users' purchases of systems and applications packages for use on in-house computer systems. The figures quoted include lease and purchase expenditures, as well as fees for work performed by the vendor to implement and maintain the package at the users' sites. Fees for work performed by organizations other than the package vendor are counted in professional services. The two sub-categories are:

1. SYSTEMS PACKAGES are operating systems, utilities, and language routines that enable the computer/communications system to perform basic functions. This software is provided by the mainframe manufacturers with their hardware; other vendors provide improved versions of this and special-purpose routines. This classification includes compilers, data base management software, communications packages, simulators, performance measurement software, diagnostic software, and sorts.
2. APPLICATIONS PACKAGES are software which perform processing to serve user functions. They consist of general purpose packages, such as for accounting and inventory control, and special purpose packages, such as personal trust, airline scheduling, and demand deposit accounting.

● PROCESSING SERVICES

Processing services encompass FM, RCS, and batch services: they are categorized by type of service, as distinguished from mode of service, bought by users as follows:

- GENERAL BUSINESS services are processing services for applications which are common to users across industry categories. Software is provided by the vendor; this can be a complete package, such as a payroll package, or an application "tool," such as a budgeting model, where a user provides much of the customizing of the finished product it uses. General business processing is often repetitive and transaction oriented.
- SCIENTIFIC AND ENGINEERING services are the processing of scientific and engineering problems for users across industries. The problems usually involve the solution of mathematical equations. Processing is generally problem solving and is nonrepetitive, except in the sense that the same packages or "tools" are used to address different, but similar, problems.

- INDUSTRY SPECIALTY services provide processing for particular functions or problems unique to an industry or industry group. The software is provided by the vendor either as a complete package or as an application "tool" which the user employs to produce its unique solution. Specialty applications can be either business or scientific in orientation; data base services where the vendor supplies the data base and controls access to it (although it may be owned by a third party) are also included under this category. Examples of industry specialty applications are: seismic data processing, numerically-controlled machine tool software development, and demand deposit accounting.
- UTILITY services are those where the vendor provides access to a computer and/or communications network with basic software that enables any user to develop its own problem solution or processing system. These basic tools include terminal handling software, sorts, language compilers, data base management systems, information retrieval software, scientific library routines, and other systems software.

EXHIBIT B-1
DEFINITION OF BANK SIZE

SIZE CATEGORY	DEPOSIT SIZE (\$ BILLIONS)
SMALL	≤\$100 MILLION
MEDIUM	>\$100≤\$500 MILLION
LARGE	>\$500M≤\$1 BILLION
VERY LARGE	>\$1 BILLION

EXHIBIT B-2

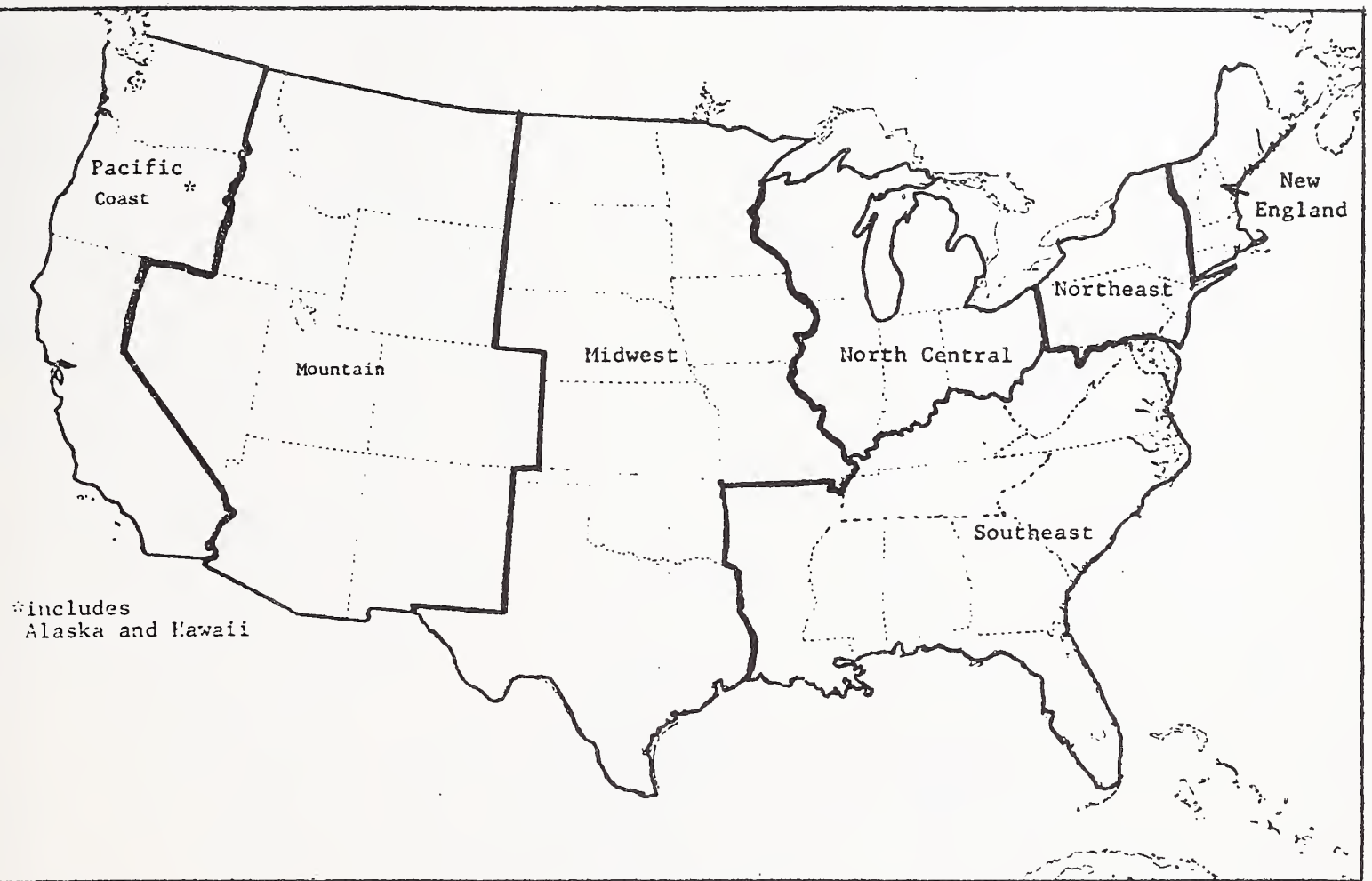
SIC CODES INVOLVED IN STUDY INDUSTRY NAME BANKING

INDUSTRY NAME	BANKING
SIC GROUP	60
SICs INCLUDED	6022-6027
SICs EXCLUDED	6011, 6028-6042

BANK SIZE	NUMBER OF BANKS	BANK DEPOSITS (\$ BILLIONS)
SMALL	14,270	\$ 276.1
MEDIUM	805	159.0
LARGE	113	81.9
VERY LARGE	108	586.8
TOTAL	15,296	\$1,103.8

EXHIBIT B-3

UNITED STATES GEOGRAPHIC REGIONS



REGION	STATES INCLUDED
NEW ENGLAND	MAINE, NEW HAMPSHIRE, VERMONT, MASSACHUSETTS, RHODE ISLAND, CONNECTICUT
NORTHEAST	NEW YORK, NEW JERSEY, PENNSYLVANIA
SOUTHEAST	DELAWARE, DISTRICT OF COLUMBIA, MARYLAND, VIRGINIA, WEST VIRGINIA, KENTUCKY, TENNESSEE, NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, FLORIDA, ALABAMA, MISSISSIPPI, ARKANSAS, LOUISIANA
NORTH CENTRAL	WISCONSIN, MICHIGAN, ILLINOIS, INDIANA, OHIO
MIDWEST	MINNESOTA, NORTH DAKOTA, SOUTH DAKOTA, IOWA, NEBRASKA, KANSAS, MISSOURI, OKLAHOMA, TEXAS
MOUNTAIN	MONTANA, IDAHO, WYOMING, NEVADA, UTAH, COLORADO, ARIZONA, NEW MEXICO
PACIFIC COAST	WASHINGTON, OREGON, CALIFORNIA, ALASKA, HAWAII

APPENDIX C: QUESTIONNAIRES

INPUT CONFIDENTIAL
EDP USER QUESTIONNAIRE

Project code and Number: MAS-CB _____

Correspondent Banking Industry

1. Does your bank spend any money for outside data processing Services for correspondent banking? ☐ Yes ☐ No

(If Yes, continue. If no, skip to question 11)

(Enter responses to 1 a, b, c, in Table 1)

(Try to get expenditures for each line item as it is discussed)

For banks using correspondent bank services:

- a. What kind of D.P. Services do you use (mode of service)?

- b. What applications do you perform via these services?

Date _____

TABLE 1

MODE OF SERVICE	APPLICATION	VENDOR(S)	EXPENDITURES (THIS YEAR)	% LAST YEAR THIS YEAR	% NEXT YEAR THIS YEAR	DURATION IN NEXT 5 YEARS
1. <u>Remote Computing Svcs.</u>						
a. Interactive T/S _____						
b. Remote Batch _____						
c. Data Base _____						
2. <u>Batch Processing Svcs.</u> _____						
Software Products _____						
(by name)						
a. Applications _____						
b. Systems _____						
Professional Svcs.						
a. Contract Programming _____						
b. Other consulting _____						
3. <u>Facilities Mgmt.</u> _____						
		TOTAL \$				

For banks using correspondent bank services (Continued)

c. Which vendor(s) provide these services to you?

d. Would you comment on your level of satisfaction with each of these vendors?

2. How did you happen to choose these particular vendors?

3. a. Who usually selects which vendor to use? _____

b. How important is the size and stature of a Computer Service Vendor in the selection process to use other than a correspondent bank for service.

4. Do you have a need for the bank/vendor offering your correspondent data processing services to be local?

5. How closely are your data processing services tied to your full correspondent relationship?

6. How do you receive your correspondent processing output?

a. How soon after close of business? _____

b. Method of delivery? _____

c. Time Constraints? _____

d. Future changes? _____

7. How valuable is a CIF file to your operation as a bank?

8. Do you feel uneasy about the data stored in a CIF file at the correspondent bank? Would you feel less of a threat if the CIF were at a services vendor?

9. How do you prefer to pay for your services?

- ☐ Compensating balances
☐ Transaction pricing
☐ Fixed monthly fee

10. How important is it to you to keep "on us" checks on site?

(Skip to question 14)

For banks offering correspondent banking service:

11. What is your attitude toward offering automated correspondent Services? It is a profitable operation?

12. How are your services priced (by application)? Is a price list available?

a. Demand deposit accounting

b. Loan accounting

c. Savings accounting _____

d. Credit cards _____

e. Payroll _____

f. Trust Services _____

g. Other _____

13. How much do you need to customize the automated correspondent bank services you offer smaller banks?

For all banks:

14. Do you have your own in-house computer(s)? ☐ YES ☐ NO

(If NO computer, and NO services expenditure, end interview)

(If NO computer, and YES services expenditures, skip to Question #20)

15. Are there other locations in your company which also have computers? ☐ YES ☐ NO (explain)

16. What kind of computer(s) does your company have (make, model) ?
and how long have you had them?

Make

Model

Year Acquired

17. Are you a member of an Automated Clearing House (ACH)?

☐ YES ☐ NO

18. Did you originally purchase your applications software, or develop it yourself?

a. If purchased, from whom? _____

b. How come you decided to do it that way (inside or outside, instead of the other)?

19. What correspondent banking applications(s) do you perform on your in-house computer(s)?

20. How would you decide which applications to do outside, and which to do on an in-house computer?

21. Are there any applications, or data, which you would never put outside? YES ☐ NO ☐

If YES, which ones, and why (e.g. Security)?

22. Do you have any plans to transfer outside applications in-house (or vice versa)?

23. a. Do you require any special hardware (computer, peripherals, storage devices, communications) to perform any of these applications?

b. For MICR Services are there any problems of operational efficiency measurement such as error rates, check flows, etc.?

24. Have you recently bought (or leased) any software products, or are you planning to do so in the near future? (If YES, enter product name, application, vendor, expenditure data in Table 1). YES NO

25. a. Do you use contract programming, or other consulting services?
(If YES, enter application and vendor in Table 1) YES ☐ NO ☐

- b. Do you use any outside professional services to bring another bank under processing?

26. Have you considered using facilities management? YES ☐ NO ☐
(If using, enter data in Table 1).

Comments (e.g., Why not?):

27. Under what conditions might you consider a facilities management contract?

28. What percentage of your company's revenues go for EDP? _____ %
(Or, how much is your EDP budget for this year): \$ _____

29. Do you know any reason why that percentage might change significantly in the next 5 years?

30. Approximately how much do you expect to spend for each of the outside services (Table 1) this year? (Try to get data by line item, Otherwise, get total)

31. How does that compare with last year? (Enter % in Table 1).

32. How about next year? (Enter % in Table 1).

INPUT

33. Do you know any reason why the share of the EDP budget which goes for outside services (including software products) might change significantly in the next 5 years?

34. a. Could any of the applications you use be more conveniently, or more economically processed in a different mode (interactive, remote batch, batch) than the one you are presently using? YES ☐ NO ☐

b. If YES, which ones, and why are you not now processing them that way?

35. What would be the next applications you would be most interested in implementing?

36. What EDP products or services would you like to have, which are not currently available?

37. Is there any particular data base which is, or would be important to you?

38. Are you aware of any trends toward or away from on-line processing in your industry?

How do you feel about the growth of large centralized processors with terminal networks as opposed to decentralized distributed networks? Which way do you think the trend is?

39. a. What impact do you expect minicomputers to have in your company with respect to your EDP operations?

- b. When would you expect that impact to become significant (year)? _____

40. a. Do you have any interest in distributed computing? ☐ YES ☐ NO

- b. (If YES), How do you think you might use distributed computing in the future?

- c. When might that be (year)?

41. What would you say is the major data processing problem in your industry?

42. How does your EDP capability affect your company's competitive position in the marketplace?

43. Are there any special hardware items you would like to see services vendors offer, which are not now generally available?

44. Are there any new or improved software products, or support services you would like to see services vendors offer?

45. Are there any changes which you would like to see in the pricing of computer services?

46. Are there any (other) developments which might increase your use of outside data processing services?

47. Who do you consider to be the leading services vendors in your industry?

INPUT CONFIDENTIAL
EDP VENDOR QUESTIONNAIRE

- PROJECT CODE AND NUMBER: MAS-CB _____
- CORRESPONDENT BANKING INDUSTRY

1. What EDP products and/or services do you provide for correspondent banking?

a. (If major software product is offered, indicate name and number of installations.)

2. What share of your total revenues comes from this portion of your business?

_____ %

3. How much money do you believe this industry will spend this year for products and services comparable to those which you offer?

\$ _____ M

4. How much do you believe is the total amount budgeted by this industry for all outside computer services this year?

\$ _____ M

5. What average rate of growth of EDP services expenditures do you expect over the next 5 years, for this industry as a whole?

_____ % per year

6. What average rate of growth of revenues do you expect your company to experience from this industry over the next 5 years?

_____ % per year

7. If 5 and 6 above are different, how come?

8. How does your anticipated growth rate of revenues from this industry compare with that of other industries you serve?

9. What percentage of your revenue from this industry is provided by each of the following modes of service?

- Remote computing - interactive _____ %
- Remote computing - remote batch _____ %
- Remote computing - inquiry (data base) _____ %
- Batch processing _____ %
- Facilities Management _____ %
- Software products _____ %
- Professional services - programming _____ %
- Professional services - other
(consulting, training, education) _____ %

TOTAL 100%

10. How does your processing services revenue from this industry (if any) break down among the following types of service?

- a. General Business _____ %
(Payroll, A/R, A/P, General Ledger, etc.)
- b. Scientific and Engineering _____ %
(Problem solving, design)
- c. Specialty Applications _____ %
(Industry oriented)
- d. Utility _____ %
(Clients buy time, use their own programs)

11. Are there any unique service requirements imposed by applications for this industry (input, processing, output, turnaround time, training, software, etc.)?

12. Are there any unique hardware requirements imposed by applications for this industry (CPU, peripherals, storage, terminals, etc.)?

13. a) What impact do you expect minicomputers to have upon your revenues from this industry?

b) When would you expect that impact to be significant?

14. a) Do you offer, or are you planning to offer, minicomputer turnkey systems to this industry?

☐ Yes ☐ No (Discuss)

b) If presently offering turnkey systems,

- How many installations do you have? _____
- What percent of revenues this year, from this industry, are from turnkey systems? _____ %

15. What do you feel is the major problem in this industry today, and how can EDP help to solve it?

16. Are there any especially important geographic areas in the U.S. for this industry?

17. a) How important to your company is the international market opportunity today, and, if important, where (country) is it?

- b) Five years from now?

18. What size firm is the primary user of your products and services in this industry (annual revenues, or number of employees)?

19. Who are your three major competitors in this industry?

- 1.

- 2.

- 3.

20. Are you aware of any trends toward or away from on-line processing in this industry?

21. Are you aware of any increasing interest by this industry in data base and and data communications products and/or services?

22. Are you aware of any legal, economic, or other variable which could significantly impact the size of the EDP market in this industry during the next 5 years?

23. Would you be willing to furnish the names and phone numbers of two of your clients for us to interview?

☐ Yes ☐ No

1. _____

2. _____

24. If any of this interview information is confidential and is not to be published, please indicate which:

25. Please send us your latest annual report, and product literature for offerings in this industry.

☐ Yes ☐ No

APPENDIX D: RELATED INPUT
REPORTS

